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BUY OR LEASE COST MODEL - SELECTED RAILWAY EQUIPMENT.(U)
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LOGISTICS STUDIES OFFICE

PROJECT NUMBER 015

BUY OR LEASE COST MODEL SELECTED RAILWAY EQUIPMENT

FINAL REPORT

APRIL 1981

U.S. ARMY
LOGISTICS MANAGEMENT CENTER
FORT LEE, VIRGINIA
23801

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This project automates the cost comparison guidance and procedures in OMB Circular A-76 and its associated Cost Comparison Handbook, DOD 4100.33-H. The computer input program is designed to use either aggregated or disaggregated management information; the output program relieves the user of the necessity for repetitive manual calculations covering system or asset lifetimes of 40 years or less, and prints its output in the comparative cost format prescribed in DOD 4100.33-H.

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ABSTRACT

The Commercial/Industrial Type Activity (CITA) lease/buy decision process does not lend itself to rapid manual calculation of alternatives over long asset lifetimes. This project automates the cost comparison guidance and procedures in OMB Circular A-76 and its associated Cost Comparison Handbook, DOD 4100.33-H. The computer input program is designed to use either aggregated or disaggregated management information; the output program relieves the user of the necessity for repetitive manual calculations covering system or asset lifetimes of 40 years or less, and prints its output in the comparative cost format prescribed in DOD 4100.33-H.

ACKNOWLEDGEMENTS

Appreciation is expressed to the study sponsor, Mr. Roger Hopper of the Defense Audit Service for his guidance and data, to Mr. W. H. Brisendine for his software programming, to Mesdames Connie Myers and Jewel Loftis for their administrative support, and to Miss Lynn Bishop for her operation of the computer terminal.

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EXECUTIVE SUMMARY

1. Authority for the Study. Letter, DRCPA-S, DARCOM, 8 July 1980, subject: Buy or Lease Cost Model - Selected Railway Equipment, as amended by letter, DRCPA-S, 30 December 1980, subject: Operations Research Services - Buy or Lease Cost Model - Selected Railway Equipment.

2. Problem Statement. There is no means for performing rapid cost calculations for lease/buy decisions in CITA applications; specifically, there is no adequate buy or lease cost model applicable to railway car acquisition for the Defense Freight Railway Interchange Fleet (DFRIF).

3. Objectives. Development of a buy or lease model for the DFRIF application that would interface with current management data, and that would have generalized application to cost comparisons of CITA functions.

4. Scope of Study. Develop a model which will consider any time span through 40 years, provide the model to the sponsor, and review model applications as requested by the sponsor.

5. Methodology. Interpret guidance in OMB Circular A-76, instructions in its associated DOD 4100.33-H, and translate guidance and instructions into software programs which will process data for input to the lease/buy decision.

6. Findings and Conclusions. The models developed therein process data as required under OMB Circular A-76 instructions and do so in a timely manner with minimum manual input.

7. Recommendations.

a. That the A76 programs developed herein be used as the buy or lease cost model for selected railway equipment.

b. That the programs be made available for wide disemmination and use for CITA evaluations, particularly those employing capital assets over medium to long life spans.

c. That provision be made for periodic update of the programs as additional guidance is published.

MAIN REPORT

I. Background. Historically, the Department of Defense has purchased railway freight cars for the Defense Freight Railway Interchange Fleet (DFRIF). In part, the DFRIF includes 586 100-ton (12-wheel) flatcars (NSN 2220-00-263-8935) acquired in 1953, and 101 100-ton (passenger trucks) flatcars (NSN 2220-00-263-8936) acquired in 1952. These flatcars are used to ship between Defense activities and installations heavy equipment such as tanks, gun mounts, generators, and boilers. As these cars approach the end of their 40-year statutory life, the question arises whether it would be less costly to lease cars rather than buy them. Lease/buy calculations are labor intensive, and do not easily permit the sensitivity analysis necessary for comparison of alternatives, particularly over long life spans of major systems. The purpose of this study is to provide a means for data input to the decision process.

II. Objective. To develop a computerized model under OMB Circular A-76 guidance that will accomplish rapid calculation of alternatives for lease/buy/mix decisions on major systems, in this case for the DFRIF.

III. Limits and Scope. The model will consider any time span through 40 years, the industry-established useful life of railcars. The scope of the study includes development of the model, providing the model to the sponsor, and reviewing model applications as requested by the sponsor.

IV. Assumptions.

A. The model must interface with current management data, i.e., not require new information collection and interpretation procedures.

B. The Defense Audit Service (DAS), as sponsor, will provide input data for the DFRIF application.

C. The model will have generalized application to cost comparisons of Commercial/Industrial Type Activities (CITA) functions.

V. Methodology. The development of any model usually includes three somewhat overlapping phases: evaluation of current procedures, synthesizing a methodology, and determining required changes to regulatory documents. For this project, competent and authoritative regulation prescribes lease/buy calculations; the study effort requires interpretation of detailed procedures and software design to accomplish those procedures. To be feasible and acceptable, any proposed design or methodology must be within present capabilities, use available resources, integrate with current management information, accept both aggregated and disaggregated data, and relieve the user of the necessity for repetitive manual calculations covering the long lifetimes of major systems.

A. A typical lease/buy calculation in the private sector is concerned with the financial advantage or disadvantage of leasing versus the costs of ownership. Included are such cost elements as purchase price, interest rate, utilization, operating costs, inflation rate, marginal tax rate, lease payments, property taxes, administration, depreciation, and residual values. Public sector in-house (buy) comparative analysis considers eight direct and related indirect costs plus four additional elements concerning opportunity costs, one-time costs, utilization of government capacity, and loss of Federal tax revenue. Contracting out (lease) analysis considers seven elements of cost to include contract price and related in-house costs that may be incurred by the Government as a result of leasing, plus seven additional elements concerning

such costs as Government-furnished facilities, conversion from buy to lease, Federal income taxes, and disposal of assets.

B. OMB Circular A-76 establishes policies and procedures to determine whether needed commercial or industrial type products and services should be done by contract (lease) with private sources or in-house (buy) using Government facilities and personnel. Detailed instructions for implementing OMB Circular A-76 cost comparison procedures are prescribed in DOD 4100.33-H, Cost Comparison Handbook. These two documents were identified by the sponsor as references for this model. The detailed instructions in the handbook prescribe the format for lease/buy comparison, establish consistency, assure that all substantive factors are considered, and maintain the uniformity so essential to a comprehensive and valid comparative cost analysis. For these reasons, the Cost Comparison Handbook was selected as the narrative model for conversion to a software model or program. The study sponsor requested the development of a full program for general application rather than a reduced version for limited application to a specific function or area, in this case the DFRIF. The complete version serves as a checklist for both user and reviewer, and maintains a more detailed audit trail for increased credibility.

C. Cost elements to be considered in the lease/buy decision are listed in Exhibit 1 (Cost Comparison Form) to Chapter II of the Cost Comparison Handbook. Appendix A to this study displays this form. The A-76 software model developed as a result of this study produces output in a format which is identical to the Cost Comparison Form except for the addition of line 36, Cost of Mixed Performance. This line, which is the sum of lines 33 and 34, is of interest only where both in-house and contracting-out performances accomplish the mission(s), as in meeting surge or other temporary requirements. The line 36

feature does not provide the optimum mix solution, if any exists. Through iteration, i.e., repetitive runs at different lease/buy mixes, line 36 will indicate changes in costs at the different mixes. The program does, however, provide for changes in asset mix, a particularly useful feature over long periods of study when some assets are replaced, added, or reduced. The DFRIF application illustrates this. Appendix B lists the components of each cost element, provides a short description, and furnishes the handbook reference for a more detailed definition. Appendix C describes the process flow to develop the data for printer, terminal, or video presentation. The usual output is by printout because it is best suited to evaluation, reproduction, and inclusion in correspondence and reports. Appendix D provides the format for data input. The usual input mode is via terminal keyboard, read from a standard 80 column worksheet prepared by the analyst. Inputs may also be accomplished by punched cards, magnetic tape, or paper tape. Data may be entered in either detailed or aggregated form; e.g., direct material costs (line 1) may be entered by source as GSA or DLA, or may be entered as a total under "other." Material invoicing documents are usually shown at full cost; i.e., include a mark-up of the basic cost; if not, there is provision for entry of prescribed mark-up rates. Similarly, there is provision for automated calculation and assignment of inflation, overhead rates, allocation rates, cost of capital, deductions, and pro-rata values. Appendix E is DAS-provided inputs at an aggregated level as shown. Appendix F is a user-level explanation for use of the A-76 software programs. Appendix G is the output produced from the DAS provided input shown in Appendix E. Appendix H displays the results of sensitivity analysis, i.e., the outcome resulting from various changes in inputs. Appendix I includes the two software

programs A76IN and A760UT, record definitions for A76IN, program variable definitions for A760UT, and structured systems analysis for A760UT. Appendix I is of interest primarily to software programming personnel.

VI. Analysis and Discussion. Analysis of cost elements listed in Appendix B and discussion of their calculation are found in Appendix C, The Program A76 Process.

VII. Findings and Conclusion. Detailed test runs of the software developed in interpretation of DOD 4100.33-H lead to the conclusion that the A76 programs can provide within current management information and techniques the processed data required in support of the lease/buy decision process.

VIII. Recommendations.

A. That the A76 programs developed herein be used as the buy or lease cost model for selected railway equipment.

B. That the programs be made available for wide disemmination and use for CITA evaluations, particularly those employing capital assets over medium to long life spans.

C. That provision be made for periodic update of the programs as additional guidance is published.

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APPENDIX A

COST COMPARISON FORM

(DEPARTMENT OR AGENCY)

COMPARATIVE COST OF IN-HOUSE AND CONTRACTING-OUT PERFORMANCE OF (PRODUCT/SERVICE)

(Date)

LINE #	Cost Element	FIRST YEAR	SECOND YEAR	THIRD YEAR	ADDITIONAL YEARS AS APPROPRIATE	TOTAL
	IN-HOUSE PERFORMANCE (CHAPTER III)	(Enter Amounts Rounded to Nearest Dollar)			(see Note)	
1.	DIRECT MATERIAL					
2.	MATERIAL OVERHEAD					
3.	DIRECT LABOR					
4.	FRINGE BENEFITS ON DIRECT LABOR					
5.	OPERATIONS OVERHEAD					
6.	OTHER DIRECT COSTS					
7.	GENERAL AND ADMINISTRATIVE EXPENSE					
8.	INFLATION	Not applic.				
9.	TOTAL					
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE					
11.	TRANSPORTATION					
12.	CONTRACT ADMINISTRATION					
13.	GOVERNMENT-FURNISHED PROPERTY					
14.	STANDBY MAINTENANCE					
15.	OTHER COSTS					
16.	GENERAL AND ADMINISTRATIVE EXPENSE					
17.	TOTAL					

NOTE : If more than four years are involved, use another form(s) to detail the annual cost of each year and enter the total here.

LINE #	Cost Element	FIRST YEAR	SECOND YEAR	THIRD YEAR	ADDITIONAL YEARS AS APPROPRIATE	TOTAL
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND (DEDUCTIONS) TO IN-HOUSE PERFORMANCE					
	ADD:					
18.	COST OF CAPITAL					
19.	ONE-TIME MEN-START COSTS					
20.	OTHER COSTS					
	DEDUCT:					
21.	OTHER COSTS	( )	( )	( )	( )	( )
22.	TOTAL					
	ADDITIONS AND (DEDUCTIONS) TO CONTRACTING-OUT PERFORMANCE					
	ADD:					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES					
24.	UTILIZATION OF GOVERNMENT CAPACITY					
25.	ONE-TIME CONVERSION COSTS					
26.	OTHER COSTS					
	DEDUCT:					
27.	FEDERAL INCOME TAXES	( )	( )	( )	( )	( )
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	( )	( )	( )	( )	( )
29	OTHER COSTS	( )	( )	( )	( )	( )
30.	TOTAL					
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	MEN-START					
32.	CONVERSION					
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + 31)					
34	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + 32)					
35	COST OF IN-HOUSE OVER (UNDER) COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)					

APPENDIX B

DESCRIPTION OF COST ELEMENTS

Line	Element (Cost Comparison Handbook Page Number)
In-House Performance (Chapter III)	
1	Direct Material Costs: Goods, parts, or supplies consumed (page 12). Elements include GSA wholesale, GSA retail, GSA nonstores, DLA wholesale stock fund, DLS direct stock fund, and others.
2	Material Overhead: Additional costs of acquiring, handling, storing, and controlling material (page 17). Includes overhead labor, fringe benefits, travel, operating supplies, maintenance, office supplies, utilities, depreciation, rent, allocations to central functions, and others.
3	Direct Labor: Wages or salaries charged only to one specific product or service (page 19).
4	Fringe Benefits: Allowances and services in addition to wages or salaries (page 24). *Includes retirement*, disability, insurance, awards, FICA, hazard pay, differentials, and others.
5	Operations Overhead: Indirect costs incurred to produce or deliver products or services (page 28). Not to be confused with material overhead or G&A Expense. Includes indirect labor, indirect materials/supplies, depreciation, rent, maintenance/repair, support costs, utilities, insurance, overtime/premium pay, and others.
6	Other Direct Costs: Direct costs, exclusive of direct material and direct labor, incurred for a particular product or service (page 43). Examples include service center charges and purchased services.
7	General and Administrative Expense: Financial, management, or other expenses incurred for the benefit of an organizational unit as a whole (page 44). Examples include director and staff, centralized personnel and administrative services, and security.
8	Inflation: Known or anticipated changes in cost/price levels of cost elements one through seven above (page 49).
9	Total: The sum by years of items one through eight above.

Line	Element (CCH Page)
Performance by Contracting Out (Chapter IV)	
10	Contract Price: The amount to be paid to the contractor for goods/services described in the statement of work (page 51).
11	Transportation Cost: Cost to the Government of transportation provided in connection with a product or service obtained by contract (page 52). Includes nonrecurring and recurring costs.
12	Contract Administration: Costs incurred by the Government in assuring that the contract is faithfully executed by both the Government and the contractor (page 53).
13	Government-Furnished Property: Property furnished to a contractor in connection with the performance of a contract (page 53). Includes nonrecurring and recurring costs. Examples include land, buildings, facilities, equipment, tooling, materials, and supplies.
14	Standby Maintenance: Nonrecurring and recurring expenses to keep property available for possible use in providing the needed product or service (page 56).
15	Other Costs: Any additional Government costs not accounted for elsewhere which would result from contracting out (page 58).
16	General and Administrative Expense: Expense applicable to the in-house effort related to contracting for a product or service (page 58).
17	Total. The sum by year of items ten through sixteen above.
Other Considerations (Chapter V)	
Additions and Deductions to In-House Performance	
18	Cost of Capital: An additional imputed charge or opportunity cost for the Government's investment in facilities and other assets necessary to produce goods or provide services (page 62).

Line	Element (CCH Page)
19	One-Time New Start Costs: Uncapitalized costs associated with establishing an in-house capability and discontinuing a contract arrangement (page 67).
20	Other Costs: Additional costs not specifically included in cost elements one through eight (page 74).
21	Other Costs: Deductible costs not specifically considered in any of the foregoing classifications of cost (page 74).
22	Algebraic total of lines eighteen through twenty-one.
	Additions and Deductions to Contracting-Out Performance
23	Cost of Capital on Government-Furnished Facilities: Cost of assets retained by the Government to assure performance in the event of significant contract interruption or delay, or required to assure contractor performance (page 63).
24	Utilization of Government Capacity: Costs of changes to or idling of government facilities resulting from contracting out (page 69). Includes standby costs, cost of replacement by other products or services, or underutilization costs.
25	One-Time Conversion Costs. Costs related to discontinuance of in-house activity to obtain the product or service by contract (page 67). Includes material-related, labor-related, other costs such as inventories or extended leasing agreements, and general and administrative expense.
26	Other Costs: Costs not specifically covered under elements 23 through 25 (page 74).
27	Federal Income Taxes: Deductions from the net cost to the Government of an estimated amount of income tax to be paid by the contractor on his income which is subject to that tax (page 74).
28	Net Proceeds from Disposal of Assets (Annual Value): Deductions from the cost to the Government when contracting reduces the need for fixed assets which the Government used in providing the product or service (page 65).

Line	Element (CCH Page)
29	Other Costs: Other deductions from the cost to the Government, i.e., savings, resulting from contracting-out (page 74).
30	Total: Algebraic total of lines 23 through 29.
	Minimum Cost Differential (Chapter VI)
31	New Start: An in-house cost margin to cover the risks inherent in Government investments in industrial facilities (page 75).
32	Conversion: A contracting-out cost margin to cover such Government risks as decreased effectiveness and personnel turbulence (page 75).
	Summary (Program output summarizing elements of cost)
33	Adjusted Cost of In-House Performance: The algebraic sum of lines 9, 22, and 31.
34	Adjusted Cost of Contracting-Out Performance: The algebraic sum of lines 17, 30, and 32.
35	Cost of In-House Over/Under (-) Cost of Contracting-Out Performance: Line 33 minus line 34.
36	Cost of Mixed Performance: Line 33 plus line 34. As indicated in the main report, this line is of interest only where both in-house and contract effort is required to meet short-term requirements. This line does not identify the optimum mix solution, but only indicates changes in cost at different lease/buy mixes.

APPENDIX C

THE PROGRAM A76 PROCESS

1. The 32 cost elements described in Appendix B may expand to a maximum of 76 components as listed in Appendix D. This accommodates data input at a detailed level, if desired, e.g., line 1 (direct material) may be entered as 1A (GSA wholesale), 1B (GSA retail), 1C (GSA nonstores), 1D (DLA wholesale stock fund), 1E (DLA direct stock fund), and 1F (other). The purpose for this spread of material sources is to provide for price mark-up to include costs of acquisition and storage functions. These A-76 directed percentage mark-ups are as shown in card columns (cc) 57-60; e.g., for line 1A it is 21%, entered as 2100, which calculates the cost as 121% of the dollars and cents (right justified) of the cost entered in cc 4-18. Normally, however, material billing includes all costs; in these cases no entry is required in cc 57-60. If material sources are not known, or if all material is rolled up in one cost, that entry may be made on line 1F, cc 4-18. The program sums lines 1A through 1F and distributes that sum to line 1 of each year in the analysis. The same input and processing procedures are accomplished for lines 2A, 2B, 03, 04, 05A, 05M, 05N, 31A, and 31B.

2. Inflation is handled somewhat differently by the A76 programs. Except for depreciation, and in compliance with Appendix 4, DOD 4100.33-H, the A76 programs provide for entry of inflation factors for each line; this to accommodate the differing rates of inflation for the diverse cost elements. Inflation rates may be entered from one tenth of one percent (0010) through 99.99% (9999) in cc 57-60; if there is no entry, the program reads it as zero inflation. Inflation factors used in this study were derived from DOD Deflators dated 5 May 1980. References to the A-76 directive and to Appendix D (Data Input Format) of this study will indicate that inflation factors are not applied to depreciation costs (02H, 05C),

non-recurring costs (11A, 13A, 14A, 15A), capital costs (23, 24A, 24B, 24C), one time conversion costs (25A, 25B, 25C, 25D, 32A, 32B), and new start costs (31A, 31B, 31C, 31D, 31E, 31F, 31G).

3. Other factor column entries, cc 61-64, specify the percentage or rate at which cost entries are to be assigned to each year of the study. The factors or rates shown in Appendix D, lines 050, 05P, 23, 25A, 24B, 24C, 31A, 31B, 31C, 31D, 31E, 32A, and 32B are as prescribed in the A-76 directive. The prescribed rates shown in lines 19, 25A, 25B, 25C, and 25D assign one-time costs at a rate of 20% to each of the first five years of the study; these years are identified by cc 73-76.

4. In line 5C, the residual or salvage factor in cc 69-72 computes the residual value of the asset at the end of its economic life or its mandatory life, if prescribed. The years of the asset life are entered in cc 77-78. The years in which assets are considered in the study are entered in cc 73-76. Assets may begin life before or during the years to be studied, and may end life or be withdrawn during or after the years to be studied. This feature permits consideration of a changing asset mix during the years under study. For line 5C, the factor or rate in cc 61-64 is used by the program to calculate the cost of disposal which enters into line 28. Line 5C depreciates assets on a straight line basis, per the A-76 directive. Given that:

C = acquisition cost

S = salvage value

D = disposal cost

L = life of the asset(s)

Y = age of the asset(s)

Annual depreciation entries in line 5C are calculated as follows:

$$(C-S)/L \qquad (A)$$

The remaining book value to be used in line 28 is thus:

$$((C-S)/L)\ (L-Y) + S \qquad (B)$$

Directive A-76 specifies that the net proceeds from the disposal of assets are to be assigned annually at ten percent of the estimated market value minus the book value. In developing an estimated market value, it was observed that one railroad depreciated at 15 years, another at 20 years. This rate of depreciation serves to reduce corporate income taxes and property taxes. It also reduces market value after twenty years to zero plus net salvage value, and the A76 program scenario is designed to accomplish this. Under straight-line depreciation, book value is greater than market value until full depreciation is taken. At this time, book value equals market value equals net salvage value. Sum-of-the-years digits (SOYD) was selected as representative of estimated market value because of its general acceptance for application to capital assets, and because the SOYD curve has characteristics similar to the market value of trucks as listed by the National Automobile Dealer's Association "Blue Book." The use of SOYD helps to generalize the model for evaluation of capital-intensive cases. Line 28 calculates the estimated market value in any given year as follows:

$$(C-S)\ \frac{((L-Y)(L-Y+1))}{(L\ (L+1))} + (S-D) \qquad (C)$$

The second term develops a SOYD decimal value which, when multiplied by the first term yields the remaining book value less net salvage value. Because there is no market value after twenty years except salvage value, the product of the first two terms declines to zero at the end of the twentieth year, leaving only net salvage value thereafter. The line 28 process is thus described as one tenth the difference of algorithm (C) minus (B), or (C-B)(.1). Line 28 data development takes place with no input other than that in line 5C. This feature avoids laborious manual data entry, and is particularly helpful in comparisons involving additions and withdrawal of assets during the years under study.

5. Line 18, Cost of Capital, is also derived from line 5C, Operations Overhead Depreciation. The program transfers line 5C cost entries in cc 4-18 to the same columns in line 18; here the net book value is calculated as in 5C, and one tenth of this value is assigned to each year the asset is used in the years under study. As noted earlier, straight-line depreciation results in a book value which is greater than market value until full depreciation is taken. When assets are withdrawn and disposed of before full depreciation, the net proceeds are more than offset by the undepreciated value of the asset. The effect is one of negative proceeds which translates as opportunity cost to the government for the foregone opportunity of using the asset to end of its depreciated life. This cost is accounted for by applying an opportunity cost rate of 10% of the net book value to line 18 for each year in the period of performance. As with line 28, line 18 data development takes place with no input other than that in line 5C.

6. Conventional Circular A-76 calculations can be accomplished for lines 5C, 18, and 28, if desired, by alternate entries in lines 5J, 20, and 26, respectively. This application, demonstrated in Appendix H, requires manual calculations for straight-line depreciation, cost of capital, and net proceeds from disposal of assets, as well as multiple alternate entries. As in Appendix H, this method may be used to bypass SOYD calculations, making net book value equal to market value.

7. The A76 model, through its two associated software programs A76IN and A76OUT, reflects A-76 directive guidance, provides for flexibility in the application of inflation and other factors, allows asset mix through additions and withdrawals, and makes possible the rapid calculation of sensitivity data for quantitative input to the decision process. The penalty for this flexibility is that the

user must be quite aware of the form of the input data (e.g., is it detailed or summary data?) and be aware of the processes or subroutines which are initiated as a result of data entries.

8. The A76IN program consists of 330 lines of BASIC language, the A760UT program of 366 lines. When compiled, A760UT runs in 45 seconds, requires 40 CPUs, and will compute and accumulate data for 40 years or less, including both period (annual) data and cumulative data.

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HOW MANY YEARS ARE TO BE STUDIED? (1)
HOW MANY YEARS ARE TO BE STUDIED? - -
STARTING WITH WHICH YEAR? _ _

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM _____ FILENAME _____
ANALYST _____

LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
01A	X	DIR MAT GSA WHOLESALE	X	2.18				X	X	
01B	X	DIR MAT GSA RETAIL	X	3.60				X	X	
01C	X	DIR MAT GSA NONSTORES	X	0.50				X	X	
01D	X	DIR MAT DLA WHOLESALE STOCK FUND	X	2.45				X	X	
01E	X	DIR MAT DLA DIRECT STOCK FUND	X	1.34				X	X	
01F	X	DIR MAT OTHER	X	X				X	X	
02A	X	MAT OHEAD LABOR	X	1.96	X			X	X	
02B	X	MAT OHEAD FRINGE BEN	X	2.06	X			X	X	
02C	X	MAT OHEAD TRAVEL	X		X			X	X	
02D	X	MAT OHEAD OPERATING SUPPLIES	X		X			X	X	
02E	X	MAT OHEAD MAINTENANCE	X		X			X	X	
02F	X	MAT OHEAD OFFICE SUPPLIES	X		X			X	X	
02G	X	MAT OHEAD UTILITIES	X		X			X	X	
02H	X	MAT OHEAD DEPRECIATION			X			X	X	
02I	X	MAT OHEAD RENT	X		X			X	X	
02J	X	MAT OHEAD ALLOCATED	X		X			X	X	
02K	X	MAT OHEAD OTHER	X		X			X	X	
03	X	DIR LABOR CIVILIAN	X	1.70				X	X	
04	X	FRINGE BEN DIR LABOR CIV	X	2.03				X	X	
05A	X	OPNS OHEAD INDIR LABOR CIV	X	2.03	X			X	X	
05B	X	OPNS OHEAD INDIR MATS & SUPPLIES	X		X			X	X	
(2) 05C	X	OPNS OHEAD DEPRECIATION			X		X	X	X	X
05D	X	OPNS OHEAD RENT	X		X			X	X	
05E	X	OPNS OHEAD MAINT & REPAIR	X		X			X	X	
05F	X	OPNS OHEAD SPT COSTS	X		X			X	X	

(1) Enter -1 in these spaces if cumulative data as well as period (annual) data is required.
(2) Enter Line 05C values only if SOYD 20-year depreciation is required; otherwise, enter depreciation in Line 05J.

DATA INPUT FORMAT

HOW MANY YEARS ARE TO BE STUDIED?
HOW MANY YEARS ARE TO BE STUDIED? _ _
STARTING WITH WHICH YEAR? _ _

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM _____ FILENAME _____
ANALYST _____

	LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
	05G	X	OPNS OHEAD UTILITIES	X		X			X	X	
	05H	X	OPNS OHEAD INSURANCE	X		X			X	X	
	05I	X	OPNS OHEAD OTIME & OTHER PREM PAY	X		X			X	X	
(3)	05J	X	OPNS OHEAD OTHER COSTS	X		X			X	X	
	05K	X	IND LAB & BEN MIL, PCS COSTS, COMM	X					X	X	
	05L	X	IND LAB & BEN MIL, PCS COSTS, ENL	X					X	X	
	05M	X	IND LAB & BEN MIL, OPER APPS SPT, COMM	X	800				X	X	
	05N	X	IND LAB & BEN MIL, OPER APPS SPT, ENL	X	2300				X	X	
	05O	X	IND LAB & BEN MIL, RETIREMENT, COMM	X		2650			X	X	
	05P	X	IND LAB & BEN MIL, RETIREMENT, ENL	X		2650			X	X	
	05Q	X	OPNS OHEAD, COMMUNICATIONS	X		X			X	X	
	05R	X	OPNS OHEAD, MIL BASE PAY & ALLOW	X		X			X	X	
	06	X	OTHER DIRECT COSTS	X					X	X	
	07	X	G & A EXPENSE	X					X	X	
(4)	08		INFLATION INCL IN 1-7, AS REQUIRED								
	10	X	CONTRACT PRICE	X					X	X	
	11A	X	TRANSPORTATION NONRECURRING						X	X	
	11B	X	TRANSPORTATION RECURRING	X					X	X	
	12	X	CONTRACT ADM	X					X	X	
	13A	X	GOVT FURN PROP NONRECURRING						X	X	
	13B	X	GOVT FURN PROP RECURRING	X					X	X	
	14A	X	STANDBY MAINT NONRECURRING						X	X	
	14B	X	STANDBY MAINT RECURRING	X					X	X	
	15A	X	OTHER COSTS NONRECURRING						X	X	
	15B	X	OTHER COSTS RECURRING	X					X	X	

(3) 05J is used for straight-line depreciation, in which case omit 05C. Additional Lines 05J may be added for other costs.
(4) Line 8 is not entered and is not used. It functions as a memo entry on the printout.

HOW MANY YEARS ARE TO BE STUDIED? _ _
HOW MANY YEARS ARE TO BE STUDIED? _ _
STARTING WITH WHICH YEAR? _ _

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM _____ FILENAME _____
ANALYST _____

	LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
	16		GEN & ADM EXPENSE								
(5)	18		COST CAP NET BK VAL ASSETS RETAINED			1.000					
	19		ONE TIME NEW START COSTS			2000					
	20		OTHER COSTS ADD								
	21		OTHER COSTS DEDUCT								
	23		COST OF CAP GOVT FURN FACILITIES			1.000					
	24A		UTIL OF GOV CAP STANDBY COSTS			1.000					
	24B		UTIL GOV CAP DISP NET PROCEEDS			1.000					
	24C		UTIL GOV CAP UNDERUTIL COSTS			1.000					
D-3	25A		ONE TIME CONV COSTS MATERIAL			2000					
	25B		ONE TIME CONV COSTS LABOR			2000					
	25C		ONE TIME CONV COSTS OTHER			2000					
	25D		ONE TIME CONV COSTS G&A			2000					
	26		OTHER COSTS ADD								
	27		FED INCOME TAXES DEDUCT								
(5)	28		NET PROCEEDS DISP OF ASSETS DEDUCT			1.000					
	29		OTHER COSTS DEDUCT								
	31A		NEW START DIRECT LABOR		44.00	1.000					
	31B		NEW START INDIRECT LABOR		44.00	1.000					
	31C		NEW START COST OF CAP			2.500					
	31D		NEW START DEPRECIATION			2.500					
	31E		NEW START MATERIAL OVERHEAD			2.500					
	31F		NEW START OPERATIONS OVERHEAD								
	31G		NEW START G&A EXPENSE								
	32A		CONVERSION COST OF DIRECT LABOR			1.600					

(5) Enter Line 18 values in Line 20 and Line 28 values in Line 26 when straight-line depreciation entries are made in Line 05J. Do not make entries in these lines when 05C is used to input data to be used by the A760UT program in calculating 20-year SOYD depreciation.

HOW MANY YEARS ARE TO BE STUDIED? _ _
HOW MANY YEARS ARE TO BE STUDIED? _ _
STARTING WITH WHICH YEAR? _ _

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM _____ FILENAME _____
ANALYST _____

LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
328	X	CONVERSION COST OF INDIRECT LABOR			1 X 0 X 0 X 0 X			X	X	X

APPENDIX E

SUMMARY DATA INPUTS

LINE #	COST ELEMENT	FIRST YEAR COST
	In-House Performance	
1	Direct Material	-0-
2	Material Overhead	-0-
3	Direct Labor	77,988
4	Fringe Benefits on Direct Labor	20,276
5	Operations Overhead	1,218,768
6	Other Direct Cost	127,052
7	General and Administrative Expense	116,729
8	Inflation	N/A
9	Total	1,560,813
	Performance by Contracting-Out	
10	Contract Price (Leasing Cost)	4,688,376
11	Transportation Cost	-0-
12	Contract Administration	187,535
13	Government Furnished Property	-0-
14	Standby Maintenance	-0-
15	Other Costs	-0-
16	General and Administrative Expense	15,003
17	Total	4,890,914
	Additions and (Deductions) to In-House Performance	
	Add:	
18	Cost of Capital	316,549
19	One Time New Start Costs	-0-
20	Other Costs (New Flatcar Procurement)	5,359,515
21	Deduct Other Costs	-0-
22	Total	5,676,064
	Additions and (Deductions) to Contracting-Out Performance	
23	Cost of Capital on Government Furnished Facilities	-0-
24	Utilization of Government Capacity	-0-
25	One-Time Conversion Costs	50,000
26	Other Costs	-0-
	Deduct:	
27	Federal Income Taxes	(93,768)
28	Net Proceeds from Disposal of Assets	313,700
29	Other Costs	-0-
30	Total	226,182

LINE #	COST ELEMENT	FIRST YEAR COST
	Minimum Cost Differential	
31	New Start	-0-
32	Conversion	48,351
	Summary	
33	Adjusted Cost of In-House Performance (Line 9 ± Line 22 + 31)	7,236,877
34	Adjusted Cost of Contracting-Out Performance	5,165,447
	Difference	2,071,430

Other inputs provided by sponsor included:

Summary Depreciation Schedule, from which was developed the Schedule for Removal and Addition of Flatcars

DOD Deflators dated 5 May 1980

SCHEDULE FOR REMOVAL AND ADDITION OF FLATCARS

YEAR	IN/OUT	FLATCARS QUANTITY	FLATCARS TYPE	YEARS	COST UNIT	COST TOTAL	INFLATION (4 decimals)	TOTAL COST
81	0	7	100T Pax	52-81	26,739	187,173	-0-	187,173
82	I	7	140T	82-21	112,594	788,158	-0-	788,158
82	0	94	100T Pax	52-82	26,739	2,513,466	-0-	2,513,466
82	0	2	100T 12 Wheel	53-82	12,017	24,034	-0-	24,034
83	I	96	140T	83-22	112,594	10,809,024	1.09	11,781,836
83	0	96	100T 12 Wheel	53-83	12,017	1,153,632	-0-	1,153,632
84	I	96	140T	84-23	112,594	10,809,024	$(1.09)^2$	12,842,201
84	0	96	100T 12 Wheel	53-84	12,017	1,153,632	-0-	1,153,632
85	I	96	140T	85-24	112,594	10,809,024	$(1.09)^3$	13,997,686
85	0	96	100T 12 Wheel	53-85	12,017	1,153,632	-0-	1,153,632
86	I	96	140T	86-25	112,594	10,809,024	$(1.09)^4$	15,258,018
86	0	96	100T 12 Wheel	53-86	12,017	1,153,632	-0-	1,153,632
87	I	96	140T	87-26	112,594	10,809,024	$(1.09)^5$	16,630,764
87	0	96	100T 12 Wheel	53-87	12,017	1,153,632	-0-	1,153,632
88	I	96	140T	88-27	112,594	10,809,024	$(1.09)^6$	18,127,814
88	0	96	100T 12 Wheel	53-88	12,017	1,153,632	-0-	1,153,632
89	I	19	140T	89-28	112,594	2,139,286	$(1.09)^7$	3,910,615
89	0	8	100T 12 Wheel	53-89	12,017	96,136	-0-	96,136

HOW MANY YEARS ARE TO BE STUDIED? - 1
HOW MANY YEARS ARE TO BE STUDIED? 40
STARTING WITH WHICH YEAR? 80

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM A76IN FILENAME A76PA2E
ANALYST _____

LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
03	77,980.00		0797					80	19	
04	20,276.00		0797					80	19	
05A	2,844,300.00		0797					80	19	
05B	80,500.00		0879					80	19	
05C	187,173.00				0016		0100	52	81	46
05C	78,815,700.00				0010		0100	82	21	40
05C	25,134,660.00				0010		0100	52	82	40
05C	2,403,400.00				0016		0100	52	82	40
05C	11,781,836,000.00				0010		0100	82	22	40
05C	11,536,320.00				0016		0100	52	87	46
05C	12,844,220,100.00				0016		0100	84	29	46
05C	11,536,320.00				0010		0100	52	87	40
05C	13,997,686,000.00				0010		0100	85	24	40
05C	11,536,320.00				0010		0100	52	85	40
05C	152,580,180.00				0016		0100	86	25	46
05C	11,536,320.00				0010		0100	53	86	40
05C	16,630,764,600.00				0016		0100	87	26	40
05C	11,536,320.00				0016		0100	53	87	40
05C	181,278,140.00				0016		0100	87	27	40
05C	11,536,320.00				0016		0100	53	88	40
05C	39,106,150.00				0016		0100	89	28	40
05C	96,136.00				0016		0100	53	89	40
05E	90,512,100.00		0832					80	19	
05G	900,600.00		0836					80	19	
05H	19,670.00		0879					80	19	

Pages E-4 and E-5 are summary data inputs from pages E-1 through E-3. Note that titles of cost elements (cc 19-52) are not entered; the A76OUT program lists them in the cost-comparison format.

HOW MANY YEARS ARE TO BE STUDIED? _ _
HOW MANY YEARS ARE TO BE STUDIED? _ _
STARTING WITH WHICH YEAR? _ _

A76INPUT

DATE _____ PAGE _____ OF _____
PROGRAM _____ FILENAME _____
ANALYST _____

LINE	COST (DOLLARS AND CENTS)	COST ELEMENTS	INFLATION	MARK-UP	OTHER RATE FACTOR	NOT USED	RESIDUAL SALVAGE FACTOR	YEAR BEG	YEAR END	LIFE YRS
05Q	41130000		1109					80	15	
05R	28153000		0761					80	15	
06	12705200		0836					80	15	
06	3152600							82	82	
06	47127300							83	83	
06	51368800							84	84	
06	55990700							85	85	
06	61032100							86	86	
06	66523100							87	87	
06	72511300							88	88	
06	15642500							89	89	
07	11671290		0836					80	15	
16	468837600		0900					80	15	
12	18753560		0900					80	15	
16	15003000		0836					80	15	
20	535951500		0900					80	15	
25B	50000000				2000			80	84	
27	468837600		0900		0200			80	15	
32A	43351000				1000			80	19	

Note that there are no entries for lines 18 and 28. The A760UT program develops data for these lines from line(s) 5C entries under 20-year SOYD procedures. For straight line depreciation, use line 5J, in which case it is necessary to calculate line 18 data (enter in line 20) and line 28 data (enter in line 26).

APPENDIX F

USING THE A76 PROGRAMS

(Key on following page)

```
:HELLO [redacted]                                   (1)
ENTER ACCOUNT PASSWORD:________

     MPE III B.K1.E2.  FRI, AUG  7, 1981, 10:45 AM
-  (2)
        :B.00.13(4WD)   BASIC   (C)HEWLETT-PACKARD CO 1979
________76IN
                 (3)
                                    (4)
ENTER FILE NAME NOW - A76XMPLE
          1         2         3         4         5         6         7
1234567890123456789012345678901234567890123456789012345678901234567890123456789
03          7798800                                             0797        8019
05C        18717300          (5)                                      0010  0100528140
-  (6)
          1         2         3         4         5         6         7
1234567890123456789012345678901234567890123456789012345678901234567890123456789
25B  (7)    5000000                                                   2000        8084
IS A FILE PRINT-OUT NEEDED (Y/N)? Y  (8)

          1         2         3         4         5         6         7
1234567890123456789012345678901234567890123456789012345678901234567890123456789
03          7798800DIRECT LABOR, CIVILIAN                   079700000000    100008019000
05C        18717300OPNS OHEAD DEPRECIATION                  000000000010    201005281400
25B         5000000ONE TIME CONV COSTS LABOR                000000002000   300008084000
RECORD NUMBER TO DELETE (USE "0" TO EXIT FROM DELETION ROUTINE)?3  (9)
LINE NUMBER  3    HAS NOW BEEN DELETED
RECORD NUMBER TO DELETE (USE "0" TO EXIT FROM DELETION ROUTINE)?0  (10)
NEED A NEW PRINTOUT FOR EDITING (Y/N)? N
WANT TO MAKE ADDITIONS TO THE FILE (Y/N)? N  (11)

                          END OF PROGRAM "A76IN"

    (12)

:RUN CA76OUT  (13)

                                   (14)
ENTER FILE NAME NOW - A76XMPLE
HOW MANY YEARS ARE TO BE STUDIED? -1  (15)
HOW MANY YEARS ARE TO BE STUDIED? 40
STARTING WITH WHICH YEAR? 80
STANDBY.......NOW COMPUTING....
```

KEY - USING THE A76 PROGRAMS

1. Sign on, provide password when requested.
2. Request BASIC language.
3. Call program A76IN.
4. Provide filename.
5. Enter data after prompt.
6. Enter "Y" to request another header if desired.
7. Enter "X" to signal completion of data input.
8. Request file printout if needed.
9. Request record deletion if required.
10. Exit from deletion routine when desired.
11. Request new printout or additions if required.
12. If printer output is desired, enter "FILE BASLIST:DEV=LP."
    If terminal output is desired, go to step 13.
13. Call program CA76OUT (the compiled version of A76OUT).
14. Identify file to be used.
15. Enter "-1" for cumulative data as well as annual (period) data.
    Enter number of years to be studied and the starting year.

ENTER FILE NAME NOW - A76BASE
HOW MANY YEARS ARE TO BE STUDIED? -1
HOW MANY YEARS ARE TO BE STUDIED? 40
STARTING WITH WHICH YEAR? 80

#S832; #01629 * BRIS.LSO; LP * WED, APR 1, 1981, 2137 PM
#S832; #01629 * BRIS.LSO; LP * WED, APR 1, 1981, 2137 PM
#S832; #01629 * BRIS.LSO; LP * WED, APR 1, 1981, 2137 PM

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1980	YEAR 1981	YEAR 1982	YEAR 1983	YEAR 1984
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	77988	84204	90915	98161	105984
4.	FRINGE BENEFITS ON DIRECT LABOR	20276	21892	23637	25521	27555
5.	OPERATIONS OVERHEAD	1218761	1346088	1968181	1983126	2346746
6.	OTHER DIRECT COSTS	127052	137674	180709	632928	688857
7.	GENERAL AND ADMINISTRATIVE EXPENSE	116729	126488	137062	148520	160937
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0.
9.	TOTAL	1560806	1716345	2400503	2888255	3330079
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	4688376	5110330	5570260	6071583	6618025
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	187535	204413	222810	242863	264721
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	15003	16257	17616	19089	20685
17.	TOTAL	4890914	5331000	5810686	6333535	6903431

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1980	YEAR 1981	YEAR 1982	YEAR 1983	YEAR 1984
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	292414	268301	316697	1387280	2567240
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	292414	268301	316697	1387280	2567240
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	10000	10000	10000	10000	10000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-93768	-102207	-111405	-121432	-132361
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	283645	259532	236791	250798	382164
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	199876	167326	135386	139367	259804
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	1853220	1984646	2717200	4275535	5697319
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	5095627	5503161	5950907	6477737	7168070
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-3242407	-3518515	-3233707	-2202202	-1270751
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	6948847	7487807	8668107	10753272	13065389

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1985	YEAR 1986	YEAR 1987	YEAR 1988	YEAR 1989
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	114431	123551	133398	144030	155509
4.	FRINGE BENEFITS ON DIRECT LABOR	29751	32122	34682	37446	40431
5.	OPERATIONS OVERHEAD	2747502	3188699	3673885	4206971	4321411
6.	OTHER DIRECT COSTS	749720	816003	888108	966622	418124
7.	GENERAL AND ADMINISTRATIVE EXPENSE	174391	188970	204768	221886	240436
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	3815795	4349344	4934840	5576955	5175911
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	7213648	7862876	8570535	9341883	10182652
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	288546	314515	342821	373675	407306
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	22414	24288	26318	28519	30903
17.	TOTAL	7524608	8201679	8939675	9744077	10620861

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1985	YEAR 1986	YEAR 1987	YEAR 1988	YEAR 1989
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	3833815	5194369	6656748	8229676	8376916
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	3833815	5194369	6656748	8229676	8376916
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-144273	-157258	-171411	-186838	-203653
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	604710	920610	1332230	1842151	2341395
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	460437	763353	1160820	1655313	2137742
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	7649610	9543713	11591588	13806631	13552827
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	7989880	8969867	10105330	11404225	12763438
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-340270	573846	1486258	2402406	789389
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	15639490	18513580	21696918	25210856	26316265

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	167903	181285	195733	211353	228177
4.	FRINGE BENEFITS ON DIRECT LABOR	43653	47132	50888	54944	59323
5.	OPERATIONS OVERHEAD	4477895	4657680	4852595	5063282	5291684
6.	OTHER DIRECT COSTS	283577	307284	332973	360810	390974
7.	GENERAL AND ADMINISTRATIVE EXPENSE	260537	282317	305919	331494	359207
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	5233565	5475699	5737910	6021863	6329364
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	11099091	12098009	13186830	14373645	15667273
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	443964	483920	527473	574946	626691
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	33486	36286	39319	42606	46168
17.	TOTAL	11576541	12618215	13753622	14991197	16340132

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	8145096	7914087	7683078	7452068	7221059
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	8145096	7914087	7683078	7452068	7221059
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-221982	-241960	-263737	-287473	-313345
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	2807297	3229921	3608543	3943163	4233782
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	2585315	2987961	3344806	3655690	3920436
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	13378661	13389786	13420988	13473931	13550423
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	14166691	15611011	17103263	18651722	20265403
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-788030	-2221225	-3682275	-5177791	-6714980
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	27545352	29000797	30524251	32125653	33815826

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	246362	265997	287197	310087	334801
4.	FRINGE BENEFITS ON DIRECT LABOR	64051	69156	74668	80619	87044
5.	OPERATIONS OVERHEAD	5539059	5806986	6097174	6411476	6751898
6.	OTHER DIRECT COSTS	423659	459077	497456	539043	584107
7.	GENERAL AND ADMINISTRATIVE EXPENSE	389237	421777	457037	495246	536648
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	6662369	7022994	7413533	7836471	8294499
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	17077327	18614287	20289573	22115634	24106041
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	683093	744571	811583	884625	964241
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	50028	54210	58742	63653	68975
17.	TOTAL	17810448	19413068	21159898	23063913	25139257

PERIOD DATA

LINE #	COST ELEMENT	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	6990050	6759041	6528031	6297022	6066013
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	6990050	6759041	6528031	6297022	6066013
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-341547	-372286	-405791	-442313	-482121
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	4480398	4683013	4841626	4956238	5026847
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	4138852	4310727	4435835	4513925	4544726
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	13652419	13782035	13941564	14133493	14360512
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	21954135	23728630	25600568	27582673	29688818
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-8301716	-9946595	-11659004	-13449180	-15328306
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	35606554	37510665	39542132	41716166	44049330

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2000	YEAR 2001	YEAR 2002	YEAR 2003	YEAR 2004
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	361485	390295	421401	454987	491250
4.	FRINGE BENEFITS ON DIRECT LABOR	93982	101472	109560	118292	127719
5.	OPERATIONS OVERHEAD	7120615	7519982	7952550	8421084	8928579
6.	OTHER DIRECT COSTS	632938	685852	743189	805320	872645
7.	GENERAL AND ADMINISTRATIVE EXPENSE	581512	630126	682805	739887	801742
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	8790532	9327727	9909505	10539570	11221935
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	26275585	28640388	31218022	34027644	37090132
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	1051023	1145615	1248721	1361105	1483605
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	74741	80989	87760	95097	103047
17.	TOTAL	27401349	29866992	32554503	35483847	38676784

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2000	YEAR 2001	YEAR 2002	YEAR 2003	YEAR 2004
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	5835003	5603994	5372985	5141976	4910966
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	5835003	5603994	5372985	5141976	4910966
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-525512	-572808	-624360	-680553	-741803
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	5053455	5036061	4974665	4869639	4726538
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	4527943	4463253	4350305	4189087	3984735
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	14625535	14931721	15282490	15681546	16132901
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	31934127	34335080	36909643	39677769	42666354
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-17308592	-19403359	-21627153	-23996223	-26533453
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	46559662	49266801	52192133	55359315	58799255

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2005	YEAR 2006	YEAR 2007	YEAR 2008	YEAR 2009
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	530402	572675	618317	667597	720805
4.	FRINGE BENEFITS ON DIRECT LABOR	137899	148889	160756	173568	187401
5.	OPERATIONS OVERHEAD	9476281	10073705	10718661	11417275	12174021
6.	OTHER DIRECT COSTS	945598	1024650	1110310	1203132	1303714
7.	GENERAL AND ADMINISTRATIVE EXPENSE	868768	941397	1020097	1105378	1197787
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	11960947	12761316	13628142	14566950	15583728
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	40428244	44066786	48032797	52355749	57067766
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	1617129	1762671	1921311	2094230	2282710
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	111661	120996	131112	142072	153950
17.	TOTAL	42157035	45950454	50085220	54592051	59504426

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2005	YEAR 2006	YEAR 2007	YEAR 2008	YEAR 2009
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	4679957	4448948	4217938	3986929	3755920
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	4679957	4448948	4217938	3986929	3755920
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-808565	-881336	-960656	-1047115	-1141355
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	4551414	4350868	4132091	3902926	3671916
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	3742849	3469532	3171435	2855811	2530561
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	16640904	17210264	17846080	18553879	19339648
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	45904719	49424821	53261490	57452697	62039822
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-29263815	-32214557	-35415410	-38898818	-42700174
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	62545623	66635085	71107570	76006576	81379470

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2010	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	778253	840280	907250	979558	1057629
4.	FRINGE BENEFITS ON DIRECT LABOR	202337	218463	235875	254674	274972
5.	OPERATIONS OVERHEAD	12993742	13881690	14843552	15885494	17014193
6.	OTHER DIRECT COSTS	1412705	1530807	1658782	1797456	1947724
7.	GENERAL AND ADMINISTRATIVE EXPENSE	1297922	1406428	1524006	1651413	1789471
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	16684959	17877668	19169465	20568595	22083988
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	62203865	67802213	73904412	80555809	87805832
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	2488154	2712088	2956176	3222232	3512233
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	166820	180766	195878	212254	229998
17.	TOTAL	64858839	70695067	77056466	83990295	91548063

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2010	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	3524910	3293901	3062892	2831883	2600873
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	3524910	3293901	3062892	2831883	2600873
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE.					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-1244077	-1356044	-1478088	-1611116	-1756117
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	3440907	3209898	2978889	2747879	2516870
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	2196830	1853854	1500800	1136763	760753
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	20209869	21171569	22232357	23400478	24684861
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	67060504	72553756	78562101	85131893	92313651
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-46850635	-51382187	-56329744	-61731415	-67628790
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	87270373	93725325	100794458	108532371	116998512

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	1141922	1232933	1331198	1437294	1551846
4.	FRINGE BENEFITS ON DIRECT LABOR	296887	320549	346096	373680	403463
5.	OPERATIONS OVERHEAD	18236888	19561421	20996290	22550705	24234645
6.	OTHER DIRECT COSTS	2110554	2286996	2478189	2685565	2909662
7.	GENERAL AND ADMINISTRATIVE EXPENSE	1939071	2101177	2276835	2467179	2673435
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	23725320	25503075	27428608	29514223	31773251
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	95708357	104322109	113711099	123945098	135100157
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	3828333	4172883	4548443	4957803	5404005
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	249226	270061	292638	317103	343613
17.	TOTAL	99785917	108765054	118552180	129220004	140847775

PERIOD DATA

LINE #	COST ELEMENT	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	2369864	2138855	1907845	1676836	1445827
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	2369864	2138855	1907845	1676836	1445827
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	0	0	0	0	0
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-1914167	-2086442	-2274222	-2478902	-2702003
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	2285861	2054851	1823842	1592833	1361824
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	371694	-31591	-450380	-886069	-1340180
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	4835	4835	4835	4835
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	26095184	27641930	29336453	31191059	33219078
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	100162446	108738298	118106635	128338770	139512430
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-74067262	-81096368	-88770182	-97147711	-106293352
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	126257630	136380228	147443088	159529829	172731508

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1980	YEAR 1981	YEAR 1982	YEAR 1983	YEAR 1984
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	77988	162192	253107	351268	457252
4.	FRINGE BENEFITS ON DIRECT LABOR	20276	42168	65805	91326	118881
5.	OPERATIONS OVERHEAD	1218761	2564849	4533030	6516156	8862902
6.	OTHER DIRECT COSTS	127052	264726	445435	1078363	1767220
7.	GENERAL AND ADMINISTRATIVE EXPENSE	116729	243217	380279	528799	689736
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	1560806	3277151	5677654	8565909	11895988
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	4688376	9798706	15368966	21440549	28058574
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	187535	391948	614758	857621	1122342
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	15003	31260	48876	67965	88650
17.	TOTAL	4890914	10221914	16032600	22366135	29269566

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1980	YEAR 1981	YEAR 1982	YEAR 1983	YEAR 1984
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	292414	560715	877412	2264692	4831932
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	292414	560715	877412	2264692	4831932
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	10000	20000	30000	40000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-93768	-195975	-307380	-428812	-561173
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	283645	543177	779968	1030766	1412930
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	199878	367204	502590	641957	901761
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	4835	9670	14505	19340	24175
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	1853220	3837866	6555066	10830601	16727920
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	5095627	10598788	16549695	23027432	30195502
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-3242407	-6760922	-9994629	-12196831	-13467582
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	6948847	14436654	23104761	33858033	46923422

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1985	YEAR 1986	YEAR 1987	YEAR 1988	YEAR 1989
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0		0	0	0
3.	DIRECT LABOR	571683	69[illegible]	828632	972662	1128171
4.	FRINGE BENEFITS ON DIRECT LABOR	148632	18[illegible]	215436	252882	293313
5.	OPERATIONS OVERHEAD	11610404	147[illegible]03	18472988	22679959	27001370
6.	OTHER DIRECT COSTS	2516940	33[illegible]	4221051	5187673	5605797
7.	GENERAL AND ADMINISTRATIVE EXPENSE	864127	105[illegible]	1257865	1479751	1720187
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	15711783	20061127	24995967	30572922	35748833
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	35272222	43135098	51705633	61047516	71230168
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	1410888	1725403	2068224	2441899	2849205
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	111064	135352	161670	190189	221092
17.	TOTAL	36794174	44995853	53935528	63679605	74300466

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1985	YEAR 1986	YEAR 1987	YEAR 1988	YEAR 1989
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	8665747	13860116	20516864	28746540	37123456
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	8665747	13860116	20516864	28746540	37123456
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GUV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GUVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-705446	-862704	-1034115	-1220953	-1424606
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	2017640	2938250	4270460	6112631	8454026
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	1362198	2125551	3286371	4941684	7079426
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	29010	33845	38680	43515	48350
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	24377530	33921243	45512831	59319462	72872289
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	38185382	47155249	57260579	68664804	81428242
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-13807852	-13234006	-11747748	-9345342	-8555953
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	62562912	81076492	102773410	127984266	154300531

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	1296074	1477359	1673092	1884425	2112602
4.	FRINGE BENEFITS ON DIRECT LABOR	336966	384098	434986	489930	549253
5.	OPERATIONS OVERHEAD	31479265	36136945	40989340	46052622	51544306
6.	OTHER DIRECT COSTS	5889374	6196658	6529631	6890441	7281415
7.	GENERAL AND ADMINISTRATIVE EXPENSE	1980724	2263041	2568960	2900454	3259661
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	40982398	46458097	52196007	58217870	64547234
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	82329259	94427268	107614098	121987743	137655016
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	3293169	3777089	4304562	4879508	5506199
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	254578	290864	330183	372789	418957
17.	TOTAL	85877007	98495222	112248844	127240041	143580173

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1990	YEAR 1991	YEAR 1992	YEAR 1993	YEAR 1994
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	45268552	53182639	60865717	68317785	75538844
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	45268552	53182639	60865717	68317785	75538844
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-1646588	-1888548	-2152285	-2439758	-2753103
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	11261323	14491244	18099787	22042950	26276732
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	9664741	12652702	15997508	19653198	23573634
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	53185	58020	62855	67690	72525
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	86250950	99640736	113061724	126535655	140086078
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	95594933	111205944	128309207	146960929	167226332
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-9343983	-11565208	-15247483	-20425274	-27140254
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	181845883	210846680	241370931	273496584	307312410

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	2358964	2624961	2912158	3222245	3557046
4.	FRINGE BENEFITS ON DIRECT LABOR	613304	682460	757128	837747	924791
5.	OPERATIONS OVERHEAD	56883365	62690351	68787525	75199001	81950899
6.	OTHER DIRECT COSTS	7705074	8164151	8661607	9200650	9784757
7.	GENERAL AND ADMINISTRATIVE EXPENSE	3648898	4070675	4527712	5022958	5559606
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	71209603	78232597	85646130	93482601	101777100
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	154732343	173346630	193636203	215751837	239857878
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	6189292	6933863	7745446	8630071	9594312
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	468985	523195	581937	645590	714565
17.	TOTAL	161390621	180803689	201963587	225027500	250166757

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 1995	YEAR 1996	YEAR 1997	YEAR 1998	YEAR 1999
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	82528894	89287935	95815966	102112988	108179001
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	82528894	89287935	95815966	102112988	108179001
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-3094650	-3466936	-3872727	-4315040	-4797161
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	30757130	35440143	40281769	45238007	50264854
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	27712486	32023213	36459048	40972973	45517699
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	77360	82195	87030	91865	96700
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	153738497	167520532	181462096	195595589	209956101
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	189180467	212909097	238509665	266092338	295781156
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-35441970	-45388565	-57047569	-70496749	-85825055
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	342918964	380429629	419971761	461687927	505737257

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2000	YEAR 2001	YEAR 2002	YEAR 2003	YEAR 2004
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	3916531	4308826	4730227	5185214	5676464
4.	FRINGE BENEFITS ON DIRECT LABOR	1018773	1120245	1229805	1348097	1475816
5.	OPERATIONS OVERHEAD	89071514	96591496	104544046	112965130	121893709
6.	OTHER DIRECT COSTS	10417695	11103547	11846736	12652056	13524701
7.	GENERAL AND ADMINISTRATIVE EXPENSE	6141118	6771244	7454049	8193936	8995678
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	110567632	119895359	129804864	140344434	151566369
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	266133463	294773851	325991873	360019517	397109649
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	10645335	11790950	13039671	14400776	15884381
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	789306	870295	958055	1053152	1156199
17.	TOTAL	277568106	307435098	339989601	375473448	414150232

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2000	YEAR 2001	YEAR 2002	YEAR 2003	YEAR 2004
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	114014004	119617998	124990983	130132959	135043925
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	114014004	119617998	124990983	130132959	135043925
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-5322673	-5895481	-6519841	-7200394	-7942197
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	55318309	60354370	65329035	70198674	74925212
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	50045642	54508895	58859200	63048287	67033022
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	101535	106370	111205	116040	120875
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	224581636	239513357	254795847	270477393	286610294
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	327715283	362050363	398960006	438637775	481304129
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-103133647	-122537006	-144164159	-168160382	-194693835
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	552296919	601563720	653755853	709115168	767914423

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2005	YEAR 2006	YEAR 2007	YEAR 2008	YEAR 2009
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	6206866	6779541	7397858	8065455	8786260
4.	FRINGE BENEFITS ON DIRECT LABOR	1613715	1762604	1923360	2096918	2284329
5.	OPERATIONS OVERHEAD	131371990	141445695	152164356	163581631	175755652
6.	OTHER DIRECT COSTS	14470299	15494949	16605259	17808391	19112105
7.	GENERAL AND ADMINISTRATIVE EXPENSE	9864446	10805843	11825940	12931318	14129105
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	163527316	176208632	189916774	204483724	220067452
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	437537893	481604679	529637476	581993225	639060991
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	17501510	19264181	21185492	23279722	25562432
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	1267860	1388856	1519968	1662040	1815990
17.	TOTAL	456307267	502257721	552342941	606934992	666439418

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2005	YEAR 2006	YEAR 2007	YEAR 2008	YEAR 2009
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	139723882	144172830	148390768	152377697	156133617
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	139723882	144172830	148390768	152377697	156133617
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-8750762	-9632098	-10592754	-11639869	-12781224
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	79476626	83827494	87959585	91862511	95534427
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	70775871	74245403	77416838	80272649	82803210
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	125710	130545	135380	140215	145050
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	303251198	320461462	338307542	356861421	376201069
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	527208848	576633669	629895159	687347856	749387678
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-223957650	-256172207	-291587617	-330486435	-373186609
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	830460046	897095131	966202701	1044209277	1125588747

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2010	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	9564513	10404793	11312043	12291601	13349230
4.	FRINGE BENEFITS ON DIRECT LABOR	2486666	2705129	2941004	3195678	3470650
5.	OPERATIONS OVERHEAD	188749394	202631084	217474636	233360130	250374323
6.	OTHER DIRECT COSTS	20524810	22055617	23714399	25511855	27459579
7.	GENERAL AND ADMINISTRATIVE EXPENSE	15427027	16833455	18357461	20008874	21798345
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	236752411	254630079	273799544	294368139	316452127
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	701264856	769067069	842971481	923527290	1011333122
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	28050586	30762674	33718850	36941082	40453315
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	1982810	2163576	2359454	2571708	2801706
17.	TOTAL	731298257	801993324	879049790	963040085	1054588148

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2010	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	159658527	162952428	166015320	168847203	171448076
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	159658527	162952428	166015320	168847203	171448076
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-14025301	-15381345	-16859433	-18470549	-20226666
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	98975334	102185232	105164121	107912000	110428870
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	85000040	86853894	88354694	89491457	90252210
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW-START	0	0	0	0	0
32.	CONVERSION	149885	154720	159555	164390	169225
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	396410938	417582507	439814864	463215342	487900203
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	816448182	889001938	967564039	1052695932	1145009583
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-420037244	-471419431	-527749175	-589480590	-657109380
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	1212859120	1306584445	1407378903	1515911274	1632909786

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019
	IN-HOUSE PERFORMANCE (CHAPTER III)					
1.	DIRECT MATERIAL	0	0	0	0	0
2.	MATERIAL OVERHEAD	0	0	0	0	0
3.	DIRECT LABOR	14491152	15724085	17055283	18492577	20044423
4.	FRINGE BENEFITS ON DIRECT LABOR	3767537	4088086	4434182	4807862	5211325
5.	OPERATIONS OVERHEAD	268611211	288172632	309166922	331719627	355954272
6.	OTHER DIRECT COSTS	29570133	31857129	34335318	37020683	39930545
7.	GENERAL AND ADMINISTRATIVE EXPENSE	23737416	25836593	28115428	30582607	33256042
8.	INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED	0	0	0	0	0
9.	TOTAL	340177447	365680522	393109130	422623353	454396604
	PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)					
10.	CONTRACT PRICE	1107041479	1211363588	1325074687	1449019785	1584119942
11.	TRANSPORTATION	0	0	0	0	0
12.	CONTRACT ADMINISTRATION	44281648	48454531	53002974	57960777	63364782
13.	GOVERNMENT-FURNISHED PROPERTY	0	0	0	0	0
14.	STANDBY MAINTENANCE	0	0	0	0	0
15.	OTHER COSTS	0	0	0	0	0
16.	GENERAL AND ADMINISTRATIVE EXPENSE	3050932	3320993	3613631	3930734	4274347
17.	TOTAL	1154374065	1263139119	1381691299	1510911303	1651759078

CUMULATIVE DATA

LINE #	COST ELEMENT	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019
	OTHER CONSIDERATIONS (CHAPTER V)					
	ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE					
18.	COST OF CAPITAL	173817940	175956795	177864640	179541476	180987303
19.	ONE-TIME NEW START COSTS	0	0	0	0	0
20.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
21.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
22.	TOTAL	173817940	175956795	177864640	179541476	180987303
	ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE					
23.	COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES	0	0	0	0	0
24.	UTILIZATION OF GOVERNMENT CAPACITY	0	0	0	0	0
25.	ONE-TIME CONVERSION COSTS	50000	50000	50000	50000	50000
26.	OTHER COSTS (ADDITIONS)	0	0	0	0	0
27.	FEDERAL INCOME TAXES	-22140833	-24227275	-26501497	-28980399	-31682402
28.	NET PROCEEDS FROM DISPOSAL OF ASSETS (ANNUAL VALUE)	112714731	114769582	116593424	118186257	119548081
29.	OTHER COSTS (DEDUCTIONS)	0	0	0	0	0
30.	TOTAL	90623904	90592313	90141933	89255864	87915684
	MINIMUM COST DIFFERENTIAL (CHAPTER VI)					
31.	NEW START	0	0	0	0	0
32.	CONVERSION	174060	178895	183730	188565	193400
	SUMMARY					
33.	ADJUSTED COST OF IN-HOUSE PERFORMANCE (LINE 9 + LINE 22 + LINE 31)	513995387	541637317	570973770	602164829	635383907
34.	ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE (LINE 17 + LINE 30 + LINE 32)	1245172029	1353910327	1472016962	1600355732	1739868162
35.	COST OF IN-HOUSE OVER/UNDER(-)COST OF CONTRACTING-OUT PERFORMANCE (LINE 33 - LINE 34)	-731176642	-812273010	-901043192	-998190903	-1104484255
36.	COST OF MIXED PERFORMANCE (LINE 33 + LINE 34)	1759167416	1895547644	2042990732	2202520561	2375252069

FILE DATA

LINE	DOLLAR AMT	LEGEND	INF-FAC	M/U-FAC	OTH-FAC	RES-FAC	BEGIN	END	YRS
3	77988.00	DIRECT LABOR, CIVILIAN	1.0797	1.0000	1.0000	.0000	80	19	0
4	20276.00	FRINGE BEN DIR LABOR	1.0797	1.0000	1.0000	.0000	80	19	0
5A	28413.00	OPNS OHEAD INDIRECT LABOR CIV	1.0797	1.0000	1.0000	.0000	80	19	0
5B	805.00	OPNS OHEAD INDIRECT MATL/SUPPLIES	1.0879	1.0000	1.0000	.0000	80	19	0
5C	187173.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	52	81	40
5C	788158.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	62	21	40
5C	24034.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	82	40
5C	11781836.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	83	22	40
5C	1153632.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	85	40
5C	12842201.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	84	23	40
5C	1153632.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	84	40
5C	13997686.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	85	24	40
5C	1153632.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	85	40
5C	15256016.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	86	25	40
5C	1153632.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	86	40
5C	16630764.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	87	26	40
5C	1153632.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	87	40
5C	18127614.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	88	27	40
5C	1153632.00	OPNS. OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	53	86	40
5C	3910615.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	89	28	40
5C	96136.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	55	89	40
5C	2513466.00	OPNS OHEAD DEPRECIATION	1.0000	1.0000	.0010	.0100	52	82	40
5E	905121.00	OPNS HEAD MAINT & REPAIR	1.0832	1.0000	1.0000	.0000	80	19	0
5G	9060.00	OPNS OHEAD UTILITIES	1.0836	1.0000	1.0000	.0000	80	19	0
5H	1967.00	OPNS OHEAD INSURANCE	1.0879	1.0000	1.0000	.0000	80	19	0
5W	4113.00	OPNS OHEAD COMMUNICATIONS	1.1109	1.0000	1.0000	.0000	80	19	0
5M	28153.00	OPNS OHEAD MIL BASE PAY & ALLOW	1.0701	1.0000	1.0000	.0000	80	19	0
6	127052.00	OTH DIR COSTS	1.0836	1.0000	1.0000	.0000	80	19	0
6	51526.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	82	82	0
6	471273.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	83	83	0
6	513688.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	84	84	0
6	559907.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	85	85	0
6	610321.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	86	86	0
6	665231.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	87	87	0
6	725113.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	88	88	0
6	156425.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	89	89	0
7	116729.00	G&A EXP	1.0836	1.0000	1.0000	.0000	80	19	0
10	4688376.00	CONTRACT PRICE	1.0900	1.0000	1.0000	.0000	80	19	0
12	187535.00	CONTRACT ADMIN	1.0900	1.0000	1.0000	.0000	80	19	0
16	15003.00	GEN & ADMIN EXP	1.0836	1.0000	1.0000	.0000	80	19	0
20	5359515.00	OTHER COSTS ADD	1.0900	1.0000	1.0000	.0000	80	19	0
25B	50000.00	ONE TIME CONV COSTS LABOR	1.0000	1.0000	.2000	.0000	80	84	0
27	4688376.00	FED INCOME TAXES DEDUCT	1.0900	1.0000	.0200	.0000	80	19	0
32A	48351.00	CONVERSION COST OF DIR LABOR	1.0000	1.0000	.1000	.0000	80	19	0

FILES A76SEN1 AND A76SEN2

CALCULATION OF MEAN (AVERAGE) COSTS FOR LINE 20 OTHER COSTS

IN LIEU OF LINE 18 COST OF CAPITAL

1	2	3		4	5	6	7
C O S T		YEARS IN USE				MEAN YEARS TIMES ANNUAL DEPRECIATION	COLUMN 2 TIMES COLUMN 6
FROM PAGE E-3	NET (.99)(COST)	FROM	TO	IN STUDY	MEAN IN STUDY		
187,173	185,301	52	81	1	.5	.0125	2,316
788,158	780,276	82	19	37	18.5	.4625	360,878
2,513,466	2,488,331	52	82	2	1.0	.0250	62,208
24,034	23,794	53	82	2	1.0	.0250	596
11,781,836	11,664,018	83	19	36	18.0	.4500	5,248,808
1,153,632	1,142,096	53	83	3	1.5	.0375	42,829
12,842,201	12,713,779	84	19	35	17.5	.4375	5,562,278
1,153,632	1,142,096	53	84	4	2.0	.0500	57,105
13,997,686	13,857,709	85	19	34	17.0	.4250	5,889,526
1,153,632	1,142,096	53	85	5	2.5	.0625	71,381
15,258,018	15,105,438	86	19	33	16.5	.4125	6,230,993
1,153,632	1,142,096	53	86	6	3.0	.0750	85,657
16,630,764	16,464,456	87	19	32	16.0	.4000	6,585,782
1,153,632	1,142,096	53	87	7	3.5	.0875	99,933
18,127,814	17,946,536	88	19	31	15.5	.3875	6,954,283
1,153,632	1,142,096	53	88	8	4.0	.1000	114,210
3,910,615	3,871,509	89	19	30	15.0	.3750	1,451,816
96,136	95,175	53	89	9	4.5	.1125	10,707

NOTE: Column 2 is net cost for depreciation after removal of 1% salvage value.

FILES A76SEN1 AND A76SEN2

CALCULATION FOR LINE 26 OTHER COSTS

IN LIEU OF LINE 28 NET PROCEEDS FROM DISPOSAL OF ASSETS

1	2	3	4	5	6	7	8
COST	ANNUAL DEPRECIATION (C-.01C)/40	YEARS IN SERVICE	YEARS REMAINING	NET BOOK VALUE 2X4	BOOK VALUE 5+.01C	MARKET VALUE (.01C-.001C)	COLUMN 7 MINUS COLUMN 6
187,173	4,633	29	11	50,963	52,835	1,685	- 51,150
2,513,466	62,208	30	10	622,080	647,215	22,622	-624,593
24,034	595	29	11	6,545	6,785	216	- 6,569
1,153,632	28,552	30	10	285,520	297,056	10,382	-286,674
1,153,632	28,552	31	9	256,968	268,504	10,382	-258,122
1,153,632	28,552	32	8	228,416	239,952	10,382	-229,570
1,153,632	28,552	33	7	199,864	211,400	10,382	-201,018
1,153,632	28,552	34	6	171,312	182,848	10,382	-172,466
1,153,632	28,552	35	5	142,760	154,296	10,382	-143,914
96,136	2,379	36	4	9,516	10,477	865	- 9,612

NOTE: In Files A76SEN1 and A76SEN2, beginning with the first full year of withdrawal, the losses in Column 8 were assigned to each year of remaining life in the assets being withdrawn from service.

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ENTER FILE NAME NOW - A76SEN1                    #317: #056  *  BRIS.LSU: BASLIST  *  FRI, APR 17, 1981,  9:33 AM
HOW MANY YEARS ARE TO BE STUDIED? -1             #317: #056  *  BRIS.LSU: BASLIST  *  FRI, APR 17, 1981,  9:33 AM
HOW MANY YEARS ARE TO BE STUDIED? 40             #317: #056  *  BRIS.LSU: BASLIST  *  FRI, APR 17, 1981,  9:33 AM
STARTING WITH WHICH YEAR? 80
```

FILE DATA

LINE	DOLLAR AMT	LEGEND	INF-FAC	M/U-FAC	OTH-FAC	RES-FAC	BEGIN	END	YRS
3	77988.00	DIRECT LABOR, CIVILIAN	1.0797	1.0000	1.0000	.0000	80	19	0
4	20276.00	FRINGE BEN DIR LABOR	1.0797	1.0000	1.0000	.0000	80	19	0
5A	28413.00	OPNS OHEAD INDIRECT LABOR CIV	1.0797	1.0000	1.0000	.0000	80	19	0
5B	805.00	OPNS OHEAD INDIRECT MATL/SUPPLIES	1.0879	1.0000	1.0000	.0000	80	19	0
5G	9060.00	OPNS OHEAD UTILITIES	1.0836	1.0000	1.0000	.0000	80	19	0
5E	905121.00	OPNS HEAD MAINT & REPAIR	1.0832	1.0000	1.0000	.0000	80	19	0
5H	1967.00	OPNS OHEAD INSURANCE	1.0879	1.0000	1.0000	.0000	80	19	0
5Q	4113.00	OPNS OHEAD COMMUNICATIONS	1.1109	1.0000	1.0000	.0000	80	19	0
5R	28153.00	OPNS OHEAD MIL BASE PAY & ALLOW	1.0701	1.0000	1.0000	.0000	80	19	0
6	127052.00	OTH DIR COSTS	1.0836	1.0000	1.0000	.0000	80	19	0
7	116729.00	G&A EXP	1.0836	1.0000	1.0000	.0000	80	19	0
16	15003.00	GEN & ADMIN EXP	1.0836	1.0000	1.0000	.0000	80	19	0
25B	50000.00	ONE TIME CONV COSTS LABOR	1.0000	1.2000	.2000	.0000	80	84	0
27	4688376.00	FED INCOME TAXES DEDUCT	1.0900	1.0000	.0200	.0000	80	19	0
32A	48351.00	CONVERSION COST OF DIR LABOR	1.0000	1.0000	.1000	.0000	80	19	0
6	31526.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	82	82	0
6	471273.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	83	83	0
6	513686.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	84	84	0
6	559907.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	85	85	0
6	610321.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	86	86	0
6	665231.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	87	87	0
6	725113.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	88	88	0
6	156425.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	89	89	0
20	2316.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	81	0
20	360878.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	19	0
20	62208.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	82	0
20	596.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	82	0
20	5246608.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	83	19	0
20	42829.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	83	0
20	5562278.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	84	19	0
20	57105.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	84	0
20	5889526.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	85	19	0
20	71381.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	85	0
20	6230993.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	86	19	0
20	85657.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	86	0
20	6585782.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	87	19	0
20	99933.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	87	0
20	6954283.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	88	19	0
20	114210.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	88	0
20	1451816.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	89	19	0
20	10707.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	89	0
26	51150.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	90	0
26	624593.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	91	0
26	6569.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	92	0
26	286674.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	83	92	0
26	258122.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	84	92	0
26	229570.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	85	92	0
26	201018.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	86	92	0
26	172466.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	87	92	0
26	143914.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	88	92	0
26	9612.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	89	92	0
5J	185301.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	81	0
5J	780286.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	82	19	0
5J	2486231.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	82	0
5J	23794.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	82	0
5J	11664018.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	83	19	0

SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	83	0
SJ	12713779.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	84	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0025	.0000	8	8	40
SJ	13857709.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	85	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	85	0
SJ	15205438.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	85	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	86	0
SJ	16464456.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	87	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	87	0
SJ	17946536.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	88	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	88	0
SJ	3871509.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	89	19	0
SJ	95175.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	89	0
10	4688376.00	CONTRACT PRICE	1.0900	1.0000	1.0000	.0000	80	19	0
12	187535.00	CONTRACT ADMIN	1.0900	1.0000	1.0000	.0000	80	19	0

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ENTER FILE NAME NOW - A76SEN2                    #S17; #052  *  BHIS,LSO; BASLIST  *  FRI, APR 17, 1981,  9:23 AM
HOW MANY YEARS ARE TO BE STUDIED? -1             #S17; #052  *  BHIS,LSO; BASLIST  *  FRI, APR 17, 1981,  9:23 AM
HOW MANY YEARS ARE TO BE STUDIED? 40             #S17; #052  *  BHIS,LSO; BASLIST  *  FRI, APR 17, 1981,  9:23 AM
STARTING WITH WHICH YEAR? 80
```

FILE DATA

LINE	DOLLAR AMT	LEGEND	INF-FAC	M/U-FAC	OTH-FAC	RES-FAC	BEGIN	END	YRS
3	77988.00	DIRECT LABOR, CIVILIAN	1.0797	1.0000	1.0000	.0000	80	19	0
4	20276.00	FRINGE BEN DIR LABOR	1.0797	1.0000	1.0000	.0000	80	19	0
5A	28413.00	OPNS OHEAD INDIRECT LABOR CIV	1.0797	1.0000	1.0000	.0000	80	19	0
5B	805.00	OPNS OHEAD INDIRECT MATL/SUPPLIES	1.0879	1.0000	1.0000	.0000	80	19	0
5G	9060.00	OPNS OHEAD UTILITIES	1.0836	1.0000	1.0000	.0000	80	19	0
5E	905121.00	OPNS HEAD MAINT & REPAIR	1.0832	1.0000	1.0000	.0000	80	19	0
5H	1967.00	OPNS OHEAD INSURANCE	1.0879	1.0000	1.0000	.0000	80	19	0
5Q	4113.00	OPNS OHEAD COMMUNICATIONS	1.1109	1.0000	1.0000	.0000	80	19	0
5M	28153.00	OPNS OHEAD MIL BASE PAY & ALLOW	1.0701	1.0000	1.0000	.0000	80	19	0
6	127052.00	OTH DIR COSTS	1.0836	1.0000	1.0000	.0000	80	19	0
7	116729.00	G&A EXP	1.0836	1.0000	1.0000	.0000	80	19	0
16	15003.00	GEN & ADMIN EXP	1.0836	1.0000	1.0000	.0000	80	19	0
25B	50000.00	ONE TIME CONV COSTS LABOR	1.0000	1.2000	.2000	.0000	80	84	0
27	4688376.00	FED INCOME TAXES DEDUCT	1.0900	1.0000	.0200	.0000	80	19	0
32A	48851.00	CONVERSION COST OF DIR LABOR	1.0000	1.0000	.1000	.0000	80	19	0
6	31526.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	82	82	0
6	471273.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	83	83	0
6	513688.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	84	84	0
6	559907.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	85	85	0
6	610321.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	86	86	0
6	665231.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	87	87	0
6	725113.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	88	88	0
6	156425.00	OTH DIR COSTS	1.0000	1.0000	1.0000	.0000	89	89	0
20	2316.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	81	0
20	360878.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	19	0
20	62208.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	82	0
20	596.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	82	0
20	5248808.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	83	19	0
20	42829.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	83	0
20	5562278.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	84	19	0
20	57105.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	84	0
20	5889526.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	85	19	0
20	71381.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	85	0
20	6230993.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	86	19	0
20	85657.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	86	0
20	6585782.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	87	19	0
20	99933.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	87	0
20	6954283.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	88	19	0
20	114210.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	88	0
20	1451816.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	89	19	0
20	10707.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	89	0
26	51150.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	81	90	0
26	624593.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	91	0
26	6569.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	82	92	0
26	286674.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	83	92	0
26	258122.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	84	92	0
26	229570.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	85	92	0
26	201018.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	86	92	0
26	172466.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	87	92	0
26	143914.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	88	92	0
26	9612.00	OTHER COSTS ADD	1.0000	1.0000	.1000	.0000	89	92	0
10	2993636.00	CONTRACT PRICE	1.0900	1.0000	1.0000	.0000	80	19	0
12	119753.00	CONTRACT ADMIN	1.0900	1.0000	1.0000	.0000	80	19	0
12	67782.00	CONTRACT ADMIN	1.0000	1.0000	.0250	.0000	80	19	0
10	1694540.00	CONTRACT PRICE	1.0000	1.0000	1.0000	.0000	80	19	0
5J	185301.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	81	0

SJ	780286.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	82	19	0
SJ	2488231.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	82	0
SJ	23794.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	82	0
SJ	11664018.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	83	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	83	0
SJ	12713779.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	84	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0025	.0000	8	8	40
SJ	13857709.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	85	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	85	0
SJ	15205438.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	85	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	86	0
SJ	16464456.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	87	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	87	0
SJ	17946536.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	88	19	0
SJ	1142096.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	88	0
SJ	3871509.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	89	19	0
SJ	95175.00	OPNS OHEAD OTHER COSTS	1.0000	1.0000	.0250	.0000	80	89	0

APPENDIX H

SUMMARY - SENSITIVITY ANALYSIS

FILE NAME	DATA	LINE NR	40 YR DATA (000000) PERIOD $	CUM $	REMARKS
A76BASE	Base data. In-House depreciates SOYD 20 years.	33	33.2	635.4	In-House
		34	139.5	1,739.9	Contract
		35	106.3	1,104.5	In-House Advantage
	Ratio In-House/ Contract		24%	37%	
A76SEN1	Base data. In-House depreciates 40 years straight-line.	33	35.6	584.4	In-House
		34	138.2	1,622.0	Contract
		35	102.5	1,037.6	In-House Advantage
	Ratio In-House/ Contract		26%	36%	
A76SEN2	A76SEN1	33	35.6	584.4	In-House
	Leased flatcars depreciate uninflated 40 years straight-line.	34	89.1	1,094.4	Contract
		35	53.5	510.0	In-House Advantage
	Ratio In-House/ Contract		40%	53%	
A76SEN3	Base data. No inflation.	33	5.1	319.5	In-House
		34	6.2	311.7	Contract
		35	1.1	7.8	In-House Advantage in Period
	Ratio In-House/ Contract		82%	103%	Contract Advantage in Cum Crossover in 1984 Crossback in 1999

ANNUAL IN-HOUSE COST AS A PERCENT OF ANNUAL CONTRACT COST

File Name \ Year	1	5	10	15	20	25	30	35	40
A76BASE	36	82	106	67	48	38	31	27	24
A76SEN1	32	61	85	63	49	40	33	29	26
A76SEN2	32	69	106	86	70	59	50	44	40
A76SEN3	36	104	170	120	99	90	87	85	82

ABOUT SENSITIVITY ANALYSIS

1. Sensitivity analysis measures the effects upon the outcome of varying the values of input elements. This aids in identifying cost drivers, helps answer "what if" questions concerning alternate resource mixes, and reduces uncertainty when using estimated or marginally validated data. The usual approach is to vary the principal cost elements one at a time by a percentage, usually plus or minus ten percent, and observe the effect percentagewise upon the outcome. The change in the effect then becomes the basis for subjective consideration in the decision process.

2. Inspection of input data in the DFRIF case indicates two probable cost drivers, acquisition costs and maintenance costs. In-house acquisition costs are displayed in lines 5C or 5J of the file data; in-house maintenance in line 5E. Contract acquisition and maintenance, as well as other contractor costs and profit margin, are rolled up in line 10. In-house maintenance costs are not evaluated in this sensitivity analysis because of lack of estimated maintenance costs for new flatcars and because expert opinion holds that state-of-the-art design results in decreased maintenance costs as compared to the old flatcars. Other cost elements are relatively so small that even major variations in their values would not change the outcome.

3. With one exception, file A76BASE provides input which is in turn

processed by A76OUT in accordance with Circular A-76. As discussed in Appendix C, in-house assets are depreciated over 20 years through sum-of-the-years digits; this to place in-house depreciation on the same or similar basis as the private sector. Summary results are shown on pages H-1 and H-2. Sensitivity run number one, identified as file A76SEN1, depreciates government assets on a straight line basis over 40 years. This results in small changes which are attributable to the difference in undepreciated asset values in the two runs. As expected, there is no change in the outcome. In sensitivity files SEN1 and SEN2, it was necessary to make entries in lines 05J, 20, and 26 for lines 05C, 18, and 28 respectively because 18 and 28 receive their inputs via software from line 05C. In line 20, a mean (average) net book value was used in each of the 18 increments of assets. This was done to avoid a separate line entry for each year of the study. This understates cost of capital in early years and overstates it in later years. Because there is no inflation involved, this has no effect on the outcome. This use of alternate lines demonstrates the flexibility of the A76 programs.

4. Sensitivity run number two, file A76SEN2, assumes equal acquisition costs of flatcars to both Government and contractor, and depreciates the leased flatcars on a straight-line basis over 40 years. This removes the contractor's flatcar assets from the 9% inflation rate applied to the contract, and depreciates those assets on the same basis as in-house assets. As

expected, this considerably reduces contract costs and increases in-house to contractor ratios. The outcome is unchanged and the in-house advantage continues to be very large.

5. Ratios at five year intervals of annual in-house cost as a percent of annual contract cost are shown on page H-2. The high ratios between the fifth and tenth year result from withdrawal of assets from the DFRIF before the end of their depreciated life. After that, the continuing downward trend suggests that nonidentified contractor costs are being inflated, perhaps improperly. Review of DFRIF data entries on pages E-4 and E-5, however, shows nearly equal inflation applied to in-house and to contractor cost elements. It may be that contractor pricing includes unknown non-quantitative considerations or non-cash elements. A large industrial chemical corporation using railway tank cars observes that their calculations always favor buy over lease options. To compensate for non-quantitative costs and risks of ownership, this corporation requires a net purchasing advantage of five to ten percent. Non-quantitative, non-cash elements may include:

a. Risk management, particularly during periods of inflation,

b. Railcar availability,

c. Ownership downtime versus credit against lease payments,

d. Risk of major repair, due to engineering defect or to Government mandated or state-of-the-art design changes,

e. Liabilities associated with an accident,

f. Costs of management time, or

g. Risk of inaccurate cost projections.

6. Sensitivity run number three, file A76SEN3, shows effects upon analysis of zero inflation. The fortieth year in-house cost is then 82% of contract cost, still below a net purchasing advantage of five to ten percent noted in the previous paragraph. The fortieth year cumulative contract advantage of 3% may be sufficient to convert from in-house (buy) to contract (lease) action. This apparent advantage may be caused by cost of capital on disposal losses. There is a fifth year crossover from in-house to contract, and a twentieth year crossback from contract to in-house. This is caused by depreciation losses on old equipment withdrawn from service, higher dollar depreciation on new equipment being placed in service, and cost of capital on disposal losses.

APPENDIX I

RECORD DEFINITION

Position	Name	
1-2	LINE	A-76 Study line number
3	SUBL	A-76 Study sub-line letter
4-16	$	Dollars
17-18	¢	Cents
4-18	DC	Dollar and Cents Costs or Acquisition Value
53-56	INFL	Inflation Factor (4 decimal fraction places)
57-60	MARK	Mark-Up Factor (4 decimal fraction places)
61-64	RATE	Rate Factor (4 decimal fraction places)
65-68	-	Reserved for future expansion
69-72	SALV	Salvage Value Factor (4 decimal fraction places), expressed as a fractional portion of DC (applies LINE/SUBL 05C only)
73-74	BY	Begin Year (two place integer) For LINE/SUBL 05C (depreciation) - Last two digits of the year in which the asset(s) were or will be placed in service For other LINE/SUBL(s) - Last two digits of the year in which the data becomes valid for the A-76 Study (normally the first year of the A-76 Study).
75-76	EY	End Year (two place integer) For LINE/SUBL 05C (depreciation) - Last two digits of the last whole year in which the assets will remain in service. For other LINE/SUBL(s) - Last two digits of the year in which the data remains valid for the A-76 Study (normally the last year of the A-76 Study).
77-78	AL	Asset Life (applies LINE/SUBL 05C only)
79	-	Reserved for future expansion

```
#S133; #0385  *  BRIS.LSO; LP  *  FRI, MAR 20, 1981, 12:51 PM
#S133; #0385  *  BRIS.LSO; LP  *  FRI, MAR 20, 1981, 12:51 PM
#S133; #0385  *  BRIS.LSO; LP  *  FRI, MAR 20, 1981, 12:51 PM

A76IN
   10 REM PREPARED BY W. H. BRISENDINE, AUTOVON 687-3264/3568, FOR JOE
   20 REM DODGE, LOG STUDIES OFFICE, ARMY LOGISTICS MANAGEMENT CENTER,
   30 REM FT LEE, VA 23801
   40 DIM B$[40],C$[8]
   50 PRINT '10
   60 B$="BUILD XXXXXXXX;REC=-80,,F,ASCII"
   70 INPUT "ENTER FILE NAME NOW - ",C$
   80 B$[7;8]=C$
   90 SYSTEM X,B$
  100 IF X<>0 AND NOT X=279 THEN DO
  110   PRINT "BUILD FAILED.  ERROR NUMBER = ";X
  120   STOP
  130 DOEND
  140 FILES *
  150 ASSIGN C$,1,X
  160 IF X<>0 THEN DO
  170   PRINT "ASSIGNMENT STATEMENT FAILED.  ERROR NUMBER = ";X
  180   STOP
  190 DOEND
  200 DIM A$[79]
  210 DIM B1$[80]
  220 DIM D$[32,50]
  230 DIM Q$[50]
  240 DIM R$[2]
  250 DIM U$[3]
  260 DIM U0$[80],U1$[80]
  270 IF TYP(1)=3 THEN 320
  280 RESTORE #1
  290 LINPUT #1;A$
  300 ON END #1 THEN 320
  310 GOTO 290
  320 U0$=&
      "         1         2         3         4         5         6    &
      7         "
  330 U1$=&
      " 12345678901234567890123456789012345678901234567890123456789012345
678901234567890"
  340 PRINT U0$;U1$
  350 U0$=&
      "         1         2         3         4         5         6    &
      7         "
  360 U1$=&
      " 12345678901234567890123456789012345678901234568789012345678901234
4567890123456789"
  370 FOR I=1 TO 1000
  380   PRINT CHR$(125);
  390   F=0,F1=0,F2=0,F3=0
  400   LINPUT A$
  410   U0$=&
        "         1         2         3         4         5         6    &
        7         "
  420   U1$=&
        " 12345678901234567890123456789012345678901234567890123456789012345
678901234567890"
  430   IF LEN(A$)<79 THEN DO
  440     A$=A$+CHR$(32)
  450     GOTO 430
  460   DOEND
  470   REM PROVIDES 79-COL HEADERS FOR OPERATOR'S CONVENIENCE
```

```
  480   IF A$[1,1]="Y" THEN DO
  490     U0$=&
        "          1         2         3         4         5         6    &
     7       "
  500     U1$=&
        " 12345678901234567890123456789012345678901234567890123456789012345&
67890123456789"
  510     PRINT U0$;U1$;
  520     GOTO 380
  530   DOEND
  540   REM BREAK-OUT PROCEDURE
  550   IF A$[1,1]="X" THEN DO
  560     I=1000
  570     GOTO 2690
  580   DOEND
  590   REM REPLACES IMPROPERLY ENTERED DATA WITH ASCII CHARACTER #126
  600   IF NUM(A$[1,1])<48 OR NUM(A$[1,1])>51 THEN U1$[2,2]=CHR$(126)
  610   IF NUM(A$[2,2])<48 OR NUM(A$[2,2])>57 THEN U1$[3,3]=CHR$(126)
  620   IF A$[1,2]="06" THEN DO
  630     PRINT &
      "THIS LINE NOT ACCEPTED!  INFLATION IS INCLUDED IN INDIVIDUAL LINE&
S"
  640     PRINT U0$;U1$;
  650     GOTO 380
  660   DOEND
  670   IF A$[1,2]="18" OR A$[1,2]="28" THEN DO
  680     PRINT &
      "THIS LINE NOT ACCEPTED!  DATA FOR A-76 LINES #18 AND #28 ARE DERI&
VED FROM LINE  #05C, OPNS OHEAD DEPRECIATION"
  690     PRINT U0$;U1$;
  700     GOTO 380
  710   DOEND
  720   IF A$[1,2]="09" OR A$[1,2]="17" OR A$[1,2]="22" OR A$[1,2]="30"&
      THEN 1930
  730   IF A$[1,2]>"32" AND A$[1,2]<"36" THEN 1930
  740   F0=NUM(A$[3,3])
  750   IF A$[1,2]="02" THEN DO
  760     IF F0>64 AND F0<76 THEN 790
  770     U1$[4,4]=CHR$(126)
  780     GOTO 1320
  790   DOEND
  800   IF A$[1,2]="04" OR A$[1,2]="06" OR A$[1,2]="07" OR A$[1,2]="08"&
      THEN DO
  810     IF F0=32 THEN 840
  820     U1$[4,4]=CHR$(126)
  830     GOTO 1320
  840   DOEND
  850   IF A$[1,2]="10" OR A$[1,2]="12" THEN DO
  860     IF F0=32 THEN 890
  870     U1$[4,4]=CHR$(126)
  880     GOTO 1320
  890   DOEND
  900   IF A$[1,2]="11" OR A$[1,2]="13" OR A$[1,2]="14" OR A$[1,2]="15"&
     OR A$[1,2]="32" THEN DO
  910     IF F0=65 OR F0=66 THEN 940
  920     U1$[4,4]=CHR$(126)
  930     GOTO 1320
  940   DOEND
  950   IF A$[1,2]>"25" AND A$[1,2]<"30" THEN DO
  960     IF F0=32 THEN 990
```

```
 970     U1$[4,4]=CHR$(126)
 980     GOTO 1320
 990   DOEND
1000   IF A$[1,2]="03" OR A$[1,2]="16" OR A$[1,2]="23" THEN DO
1010     IF F0=32 THEN 1040
1020     U1$[4,4]=CHR$(126)
1030     GOTO 1320
1040   DOEND
1050   IF A$[1,2]>"17" AND A$[1,2]<"22" THEN DO
1060     IF F0=32 THEN 1090
1070     U1$[4,4]=CHR$(126)
1080     GOTO 1320
1090   DOEND
1100   IF A$[1,2]="24" THEN DO
1110     IF F0<68 AND F0>64 THEN 1140
1120     U1$[4,4]=CHR$(126)
1130     GOTO 1320
1140   DOEND
1150   IF A$[1,2]="25" OR A$[1,2]="31" THEN DO
1160     IF F0<69 AND F0>64 THEN 1190
1170     U1$[4,4]=CHR$(126)
1180     GOTO 1320
1190   DOEND
1200   IF A$[1,2]="01" THEN DO
1210     IF F0<71 AND F0>64 THEN 1240
1220     U1$[4,4]=CHR$(126)
1230     GOTO 1320
1240   DOEND
1250   IF A$[1,2]="05" THEN DO
1260     IF F0<63 AND F0>64 THEN 1280
1270     U1$[4,4]=CHR$(126)
1280   DOEND
1290   CONVERT A$[73,74] TO F0,3220
1300   CONVERT A$[75,76] TO F0,3250
1310   IF A$[1,3]="05C" THEN CONVERT A$[77,78] TO F0,3280
1320   FOR I1=53 TO 79
1330     IF A$[I1,I1]=CHR$(32) THEN A$[I1,I1]=CHR$(48)
1340     IF A$[I1,I1]>CHR$(47) AND A$[I1,I1]<CHR$(58) THEN 1370
1350     U1$[I1+1,I1+1]=CHR$(126)
1360     F2=1
1370   NEXT I1
1380   FOR I1=4 TO 18
1390     IF A$[I1,I1]=CHR$(32) AND F<>1 THEN 1440
1400     F=1
1410     IF A$[I1,I1]>CHR$(47) AND A$[I1,I1]<CHR$(58) THEN 1440
1420     U1$[I1+1,I1+1]=CHR$(126)
1430     F3=1
1440   NEXT I1
1450   IF F3=1 THEN 1490
1460   IF A$[18,18]=" " THEN A$[18,18]="0"
1470   CONVERT A$[4,18] TO F1
1480   IF F1=0 THEN U1$[19,19]=CHR$(126)
1490   FOR I1=2 TO 19
1500     IF U1$[I1,I1]<>CHR$(126) THEN 1520
1510     F2=1
1520   NEXT I1
1530   FOR I1=54 TO 80
1540     IF U1$[I1,I1]<>CHR$(126) THEN 1560
1550     F2=1
1560   NEXT I1
```

```
1570    IF F2=1 THEN DO
1580      PRINT U0$;U1$;
1590      GOTO 380
1600    DOEND
1610    IF A$[1,2]="25" OR A$[1,3]="11A" OR A$[1,3]="13A" OR A$[1,3]=&
      "14A" OR A$[1,3]="15A" THEN DO
1620      CONVERT A$[73,74] TO C
1630      CONVERT A$[75,76] TO C1
1640      IF C>C1 THEN C1=C1+100
1650      IF C1>C+39 THEN DO
1660        U1$[74,74]=CHR$(126),U1$[75,75]=CHR$(126),U1$[76,76]=CHR$(&
      126),U1$[77,77]=CHR$(126)
1670        PRINT U0$;U1$;
1680        GOTO 380
1690      DOEND
1700      C1=C1+1
1710      C1=10000/(C1-C)
1720      C1=INT(C1+.5)
1730      CONVERT C1 TO B1$
1740      IF C1=10000 THEN B1$="0000"
1750      IF LEN(B1$)<4 THEN DO
1760        B1$="0"+B1$
1770        GOTO 1750
1780      DOEND
1790      A$[61,64]=B1$
1800    DOEND
1810    IF A$[1,3]="05C" THEN DO
1820      CONVERT A$[73,74] TO C
1830      CONVERT A$[75,76] TO C1
1840      CONVERT A$[77,78] TO C2
1850      IF C1<C THEN C1=C1+100
1860      IF C2<C1+1-C THEN DO
1870        PRINT &
      "TERM OF ASSET SERVICE IS LONGER THAT ASSET DEPRECIABLE LIFE.  RE-&
    DO"
1880        PRINT U0$;U1$;
1890        GOTO 380
1900      DOEND
1910    DOEND
1920    GOTO 1960
1930    PRINT "NO INPUT ALLOWED ON A SUB-TOTAL LINE!  RE-DO"
1940    PRINT U0$;U1$;
1950    GOTO 380
1960    IF A$[1,3]="01A" THEN A$[19,52]=&
      "DIR MAT GSA WHOLESALE                "
1970    IF A$[1,3]="01B" THEN A$[19,52]=&
      "DIR MAT GSA RETAIL                   "
1980    IF A$[1,3]="01C" THEN A$[19,52]=&
      "DIR MAT GSA NONSTORES                "
1990    IF A$[1,3]="01D" THEN A$[19,52]=&
      "DIR MAT DLA WHOLESALE STOCK FUND     "
2000    IF A$[1,3]="01E" THEN A$[19,52]=&
      "DIR MAT DLA DIRECT STOCK FUND        "
2010    IF A$[1,3]="01F" THEN A$[19,52]=&
      "DIR MAT OTHER                        "
2020    IF A$[1,3]="02A" THEN A$[19,52]=&
      "MAT OHEAD LABOR                      "
2030    IF A$[1,3]="02B" THEN A$[19,52]=&
      "MAT OHEAD LABOR FRINGE BEN           "
2040    IF A$[1,3]="02C" THEN A$[19,52]=&
```

```
    "MAT OHEAD TRAVEL                    "
2050    IF A$[1,3]="02D" THEN A$[19,52]=&
    "MAT OHEAD OPERATING SUPPLIES        "
2060    IF A$[1,3]="02E" THEN A$[19,52]=&
    "MAT OHEAD MAINT                     "
2070    IF A$[1,3]="02F" THEN A$[19,52]=&
    "MAT OHEAD OFFICE SUPPLIES           "
2080    IF A$[1,3]="02G" THEN A$[19,52]=&
    "MAT OHEAD UTILITIES                 "
2090    IF A$[1,3]="02H" THEN A$[19,52]=&
    "MAT OHEAD DEPRECIATION              "
2100    IF A$[1,3]="02I" THEN A$[19,52]=&
    "MAT OHEAD RENT                      "
2110    IF A$[1,3]="02J" THEN A$[19,52]=&
    "MAT OHEAD ALLOCATED                 "
2120    IF A$[1,3]="02K" THEN A$[19,52]=&
    "MAT OHEAD OTHER                     "
2130    IF A$[1,3]="03 " THEN A$[19,52]=&
    "DIRECT LABOR, CIVILIAN              "
2140    IF A$[1,2]="04" THEN A$[19,52]=&
    "FRINGE BEN DIR LABOR                "
2150    IF A$[1,3]="05A" THEN A$[19,52]=&
    "OPNS OHEAD INDIRECT LABOR CIV       "
2160    IF A$[1,3]="05B" THEN A$[19,52]=&
    "OPNS OHEAD INDIRECT MATL/SUPPLIES   "
2170    IF A$[1,3]="05C" THEN A$[19,52]=&
    "OPNS OHEAD DEPRECIATION             "
2180    IF A$[1,3]="05D" THEN A$[19,52]=&
    "OPNS OHEAD RENT                     "
2190    IF A$[1,3]="05E" THEN A$[19,52]=&
    "OPNS HEAD MAINT & REPAIR            "
2200    IF A$[1,3]="05F" THEN A$[19,52]=&
    "OPNS OHEAD SPT COSTS                "
2210    IF A$[1,3]="05G" THEN A$[19,52]=&
    "OPNS OHEAD UTILITIES                "
2220    IF A$[1,3]="05H" THEN A$[19,52]=&
    "OPNS OHEAD INSURANCE                "
2230    IF A$[1,3]="05I" THEN A$[19,52]=&
    "OPNS OHEAD OTIME & OTH PREM PAY     "
2240    IF A$[1,3]="05J" THEN A$[19,52]=&
    "OPNS OHEAD OTHER COSTS              "
2250    IF A$[1,3]="05K" THEN A$[19,52]=&
    "IND LAB&BEN MIL, PCS COSTS, COMM    "
2260    IF A$[1,3]="05L" THEN A$[19,52]=&
    "IND LAB&BEN MIL, PCS COSTS, ENL     "
2270    IF A$[1,3]="05M" THEN A$[19,52]=&
    "IND LAB&BEN MIL,OPER APPS SPT,COMM  "
2280    IF A$[1,3]="05N" THEN A$[19,52]=&
    "IND LAB&BEN MIL,OPER APPS SPT,ENL   "
2290    IF A$[1,3]="05O" THEN A$[19,52]=&
    "IND LAB&BEN MIL, RETIREMENT, COMM   "
2300    IF A$[1,3]="05P" THEN A$[19,52]=&
    "IND LAB&BEN MIL, RETIREMENT, ENL    "
2310    IF A$[1,3]="05Q" THEN A$[19,52]=&
    "OPNS OHEAD COMMUNICATIONS           "
2320    IF A$[1,3]="05R" THEN A$[19,52]=&
    "OPNS OHEAD MIL BASE PAY & ALLOW     "
2330    IF A$[1,2]="06" THEN A$[19,52]=&
    "OTH DIR COSTS                       "
2340    IF A$[1,2]="07" THEN A$[19,52]=&
```

```
    "G&A EXP                                "
2350    IF A$(1,2)="10" THEN A$(19,52)=&
    "CONTRACT PRICE                         "
2360    IF A$(1,3)="11A" THEN A$(19,52)=&
    "TRANSPORTATION NONRECUR                "
2370    IF A$(1,3)="11B" THEN A$(19,52)=&
    "TRANS RECUR                            "
2380    IF A$(1,2)="12" THEN A$(19,52)=&
    "CONTRACT ADMIN                         "
2390    IF A$(1,3)="13A" THEN A$(19,52)=&
    "GOV FURN PROP NONRECUR                 "
2400    IF A$(1,3)="13B" THEN A$(19,52)=&
    "GOV FURN PROP RECUR                    "
2410    IF A$(1,3)="14A" THEN A$(19,52)=&
    "STANDBY MAINT NONRECUR                 "
2420    IF A$(1,3)="14B" THEN A$(19,52)=&
    "STANDBY MAINT RECUR                    "
2430    IF A$(1,3)="15A" THEN A$(19,52)=&
    "OTH COSTS NONREC                       "
2440    IF A$(1,3)="15B" THEN A$(19,52)=&
    "OTHER COSTS RECUR                      "
2450    IF A$(1,2)="16" THEN A$(19,52)=&
    "GEN & ADMIN EXP                        "
2460    IF A$(1,2)="18" THEN A$(19,52)=&
    "COST CAP,NET BK VAL ASSETS RETAIND"
2470    IF A$(1,2)="19" THEN A$(19,52)=&
    "ONE TIME NEW START COSTS               "
2480    IF A$(1,2)="20" THEN A$(19,52)=&
    "OTHER COSTS ADD                        "
2490    IF A$(1,2)="21" THEN A$(19,52)=&
    "OTHER COSTS DEDUCT                     "
2500    IF A$(1,3)="25C" THEN A$(19,52)=&
    "ONE TIME CONV COSTS OTHER              "
2510    IF A$(1,2)="26" THEN A$(19,52)=&
    "OTHER COSTS ADD                        "
2520    IF A$(1,2)="29" THEN A$(19,52)=&
    "OTHER COSTS DEDUCT                     "
2530    IF A$(1,2)="23" THEN A$(19,52)=&
    "COST OF CAP ON GFF                     "
2540    IF A$(1,3)="24A" THEN A$(19,52)=&
    "UTIL OF GOV CAP STANDBY COSTS          "
2550    IF A$(1,3)="24B" THEN A$(19,52)=&
    "UTIL GOV CAP DISPOSTN NET PROCEEDS"
2560    IF A$(1,3)="24C" THEN A$(19,52)=&
    "UTIL GOV CAP UNDERUTILIZATN COSTS "
2570    IF A$(1,3)="25A" THEN A$(19,52)=&
    "ONE TIME CONV COSTS MATERIAL           "
2580    IF A$(1,3)="25B" THEN A$(19,52)=&
    "ONE TIME CONV COSTS LABOR              "
2590    IF A$(1,3)="25D" THEN A$(19,52)=&
    "ONE TIME CONV COSTS G&A                "
2600    IF A$(1,2)="27" THEN A$(19,52)=&
    "FED INCOME TAXES DEDUCT                "
2610    IF A$(1,2)="28" THEN A$(19,52)=&
    "NEW PROCEEDS DISP OF ASSETS DEDUCT"
2620    IF A$(1,3)="31A" THEN A$(19,52)=&
    "NEW START DIR LABOR                    "
2630    IF A$(1,3)="31B" THEN A$(19,52)=&
    "NEW START INDIR LABOR                  "
2640    IF A$(1,3)="31C" THEN A$(19,52)=&
```

```
    "NEW START COST OF CAP                "
2650   IF A$(1,3)="510" THEN A$(19,52)=&
    "NEW START DEPRECIATION               "
2660   IF A$(1,3)="32A" THEN A$(19,52)=&
    "CONVERSION COST OF DIR LABOR         "
2670   IF A$(1,3)="526" THEN A$(19,52)=&
    "CONVERSION COST OF INDIR LABOR       "
2680   PRINT #1;A$
2690 NEXT I
2700 RESTORE #1
2710 INPUT "IS A FILE PRINT-OUT NEEDED (Y/N)? ",L8$
2720 IF L8$="N" THEN DO
2730   Z2=-1
2740   PRINT '10
2750   PRINT "                                   END OF PROGRAM ";CHR$(34);&
    "A76IN";CHR$(34)
2760   PRINT '10,'10,'10
2770   END
2780 DOEND
2790 IF L8$<>"Y" THEN 2710
2800 PRINT
2810 PRINT U0$;U1$
2820 FOR I=1 TO 1000
2830   LINPUT #1;A$
2840   ON END #1 THEN 2880
2850   IF A$(1,1)=" " THEN 2880
2860   PRINT USING 2870;A$(1,64),I,A$(69,79)
2870   IMAGE " ",64A,4D,11A
2880 NEXT I
2890 U0=REC(1)
2900 PRINT "RECORD NUMBER TO DELETE (USE ";CHR$(34);"0";CHR$(34);&
    " TO EXIT FROM DELETION ROUTINE)";
2910 INPUT U$
2920 CONVERT U$ TO I2,2990
2930 IF I2>U0-1 THEN 3080
2940 IF I2<0 THEN DO
2950   PRINT "BAD LINE NUMBER ENTERED!  RE-DO"
2960   RESTORE #1
2970 DOEND
2980 GOTO 3010
2990 PRINT "NON-NUMERIC ENTRY!  RE-DO"
3000 GOTO 2900
3010 IF I2=0 THEN 3140
3020 RESTORE #1
3030 FOR I=1 TO I2-1
3040   LINPUT #1;A$
3050   ON END #1 THEN 3080
3060 NEXT I
3070 GOTO 3110
3080 PRINT "LINE NUMBER IS TOO HIGH!  RE-DO"
3090 RESTORE #1
3100 GOTO 2900
3110 PRINT #1;" "
3120 PRINT "LINE NUMBER ";I2;"HAS NOW BEEN DELETED"
3130 GOTO 2900
3140 INPUT "NEED A NEW PRINTOUT FOR EDITING (Y/N)? ",L8$
3150 RESTORE #1
3160 IF L8$="Y" THEN 2810
3170 IF L8$<>"N" THEN 3140
3180 INPUT "WANT TO MAKE ADDITIONS TO THE FILE (Y/N)? ",L8$
```

```
3190 IF L8$="Y" THEN 280
3200 IF L8$<>"N" THEN 3180
3210 GOTO 2740
3220 U1$(74,74)=CHR$(126)
3230 U1$(75,75)=CHR$(126)
3240 GOTO 1300
3250 U1$(76,76)=CHR$(126)
3260 U1$(77,77)=CHR$(126)
3270 GOTO 1310
3280 U1$(78,78)=CHR$(126)
3290 U1$(79,79)=CHR$(126)
3300 GOTO 1320
```

PROGRAM VARIABLE DEFINITIONS A760UT

SSY	Study Start Year (last two digits) [Operator Input]
YRS	Number of years to be studied [Operator Input]
R	Depreciation (straight line)
R1	Line 28 Value
I3	AL value, but not to exceed 20
I4	Sum-of-years-digits
I5	EY value, but not to exceed 20
R2	Interim value used by program
M2 Array	An array containing results of computations by year, by A-76 Study line number (e.g., M2 (year, line number)
Y6	Last year to be printed in the A-76 Study

These definitions, when applied to the structured systems analysis flowchart which follows, provide a macro description which shows hierarchical organization/program functions, describe relations of these functions, and identify data flow interfaces.

AD-A105 996 LOGISTICS STUDIES OFFICE (ALMC) FORT LEE VA F/G 15/5
BUY OR LEASE COST MODEL - SELECTED RAILWAY EQUIPMENT.(U)
APR 81 J A DODGE, W H BRISENDINE

UNCLASSIFIED NL

2 OF 2
AD A
105996

END
DATE FILMED
11-81
DTIC

FLOWCHART IN STRUCTURED SYSTEMS ANALYSIS FORMAT

A760UT

For Record #1 to Record #1000

Get next record
If end-of-file occurs before Record #1000, then go to summary routine
If the next record is blank, go to next record
If Rate = 0, then Rate = 1
If EY < BY, then new EY = Old EY + 100
New BY = Old BY - SSY + 1
New EY = Old EY - SSY + 1
[Remark - Preceding 3 lines convert old BY and EY, based on calendar year data, to a numerical relationship appropriate to a study beginning in Year 1" while variable I8 retains old BY value]

For Year 1 to YRS
[Remark - YRS is number of years in study]
If Year < BY or Year > EY, go to next year
[Remark - eliminates computations for lines which are not applicable in certain years; applies particularly to LINE/SUBL(s) 05C]
Initialize I4, I3, R1, R, R2 to Zero

If LINE/SUBL = 05C, then DO
If old BY > 1, then new BY = 1
[Remark - necessary for inflation indexing]

$$R = \frac{(DC - DC \times SALV) \times (1 + INFL)^{(YRS - BY)}}{AL}$$

If Year = EY, then DO
New R = Old R X (AL + BY - Year)
End of IF-DO
I3 = AL
If AL > 20, then I3 = 20
[Remark - maximum of 20 years for use of sum-of-years-digits in Line 28 of study]
If Flag = 1, then skip following two lines
I5 = EY
If EY > 20, then I5 = 20
I5 = I5 - 1

For $Year_1$ = 1 to I3

New I4 = Old I4 + Year
Next $Year_1$

[Remark - I4 becomes sum-of-years-digits]

For $Year_2$ = 1 to I5

$$\text{New R1} = \text{Old R1} + \frac{(DC - DC \times SALV) \times Year}{I4}$$

Next $Year_2$

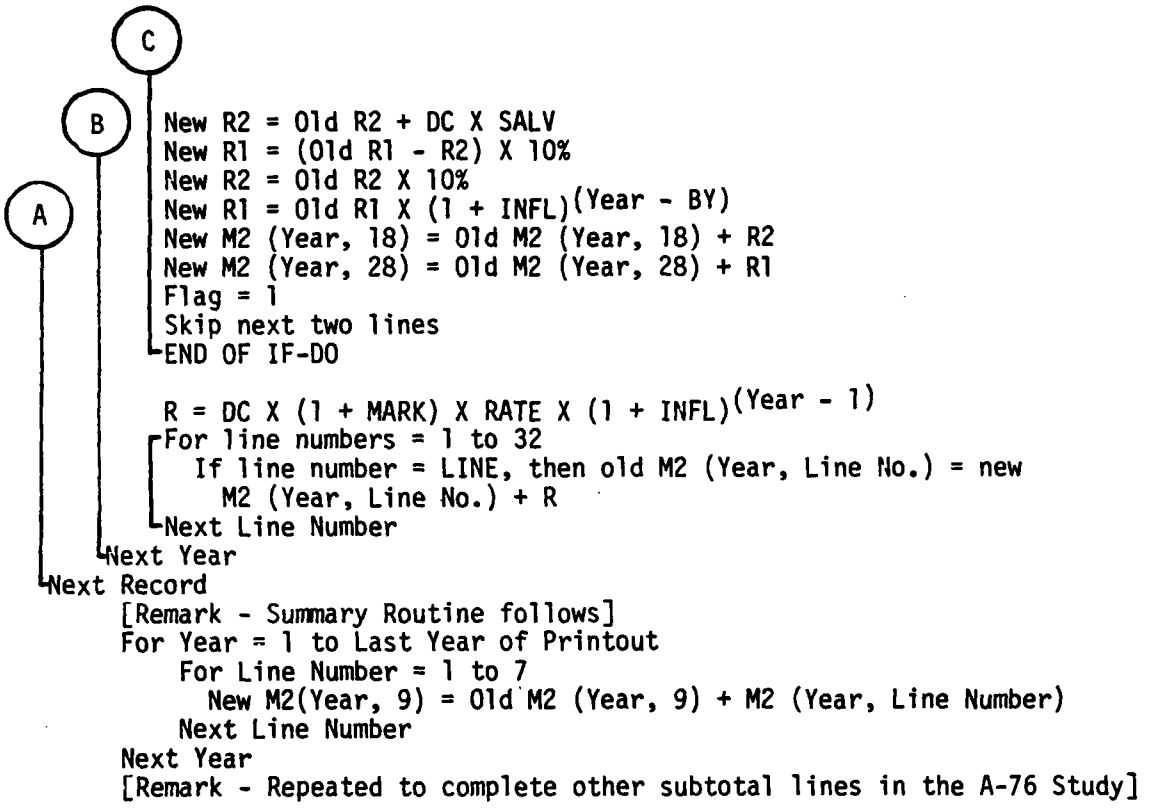
New R1 = Old R1 + DC X SALV
New R1 = Old R1 - DC X RATE
[Remark - Rate = disposal cost factor]

$$R2 = \frac{(DC - DC \times SALV) \times (AL + SY - Year - 1)}{AL}$$

A

B

C


C
B
A
New R2 = Old R2 + DC X SALV
New R1 = (Old R1 - R2) X 10%
New R2 = Old R2 X 10%
New R1 = Old R1 X (1 + INFL)(Year - BY)
New M2 (Year, 18) = Old M2 (Year, 18) + R2
New M2 (Year, 28) = Old M2 (Year, 28) + R1
Flag = 1
Skip next two lines
END OF IF-DO
R = DC X (1 + MARK) X RATE X (1 + INFL)(Year - 1)
For line numbers = 1 to 32
If line number = LINE, then old M2 (Year, Line No.) = new M2 (Year, Line No.) + R
Next Line Number
Next Year
Next Record
[Remark - Summary Routine follows]
For Year = 1 to Last Year of Printout
For Line Number = 1 to 7
New M2(Year, 9) = Old M2 (Year, 9) + M2 (Year, Line Number)
Next Line Number
Next Year
[Remark - Repeated to complete other subtotal lines in the A-76 Study]

```
#S133: #0384  *  BRIS.LSO: LP  *  FRI, MAR 20, 1981, 12:51 PM
#S133: #0384  *  BRIS.LSO: LP  *  FRI, MAR 20, 1981, 12:51 PM
#S133: #0384  *  BRIS.LSO: LP  *  FRI, MAR 20, 1981, 12:51 PM

A760UT
   10 REM PREPARED BY M. H. BRISENDINE, AUTOVON 687-3264/3568, FOR JOE
   20 REM DODGE, LOG STUDIES OFFICE, ARMY LOGISTICS MANAGEMENT CENTER,
   30 REM FT LEE, VA 23801
   40 DIM B$[40],C$[8]
   50 B$="BUILD XXXXXXXX;REC=-80,,F,ASCII"
   60 PRINT '10
   70 INPUT "ENTER FILE NAME NOW - ",C$
   80 B$[7;8]=C$
   90 SYSTEM X,B$
  100 IF X<>0 AND NOT X=279 THEN DO
  110   PRINT "BUILD FAILED.  ERROR NUMBER = ";X
  120   STOP
  130 DOEND
  140 FILES *
  150 ASSIGN C$,1,X
  160 IF X<>0 THEN DO
  170   PRINT "ASSIGNMENT FAILED.  ERROR NUMBER = ";X
  180   STOP
  190 DOEND
  200 LONG M[32,4]
  210 LONG M1[10]
  220 LONG M2[40,32]
  230 LONG M4[5]
  240 LONG M5[5]
  250 LONG M6[5]
  260 LONG M7[5]
  270 LONG R
  280 LONG R1
  290 LONG R2
  300 LONG Y6
  310 LONG Y5
  320 MAT M=ZER
  330 MAT M1=ZER
  340 MAT M2=ZER
  350 MAT M4=ZER
  360 MAT M5=ZER
  370 MAT M6=ZER
  380 MAT M7=ZER
  390 DIM A$[80]
  400 DIM B1$[80]
  410 DIM D$[32,50]
  420 DIM U$[50]
  430 DIM R8$[2]
  440 DIM U$[3]
  450 F3=0,F=0,P=1,R=0,R1=0,R2=0,V7=0
  460 Z2=-1
  470 INPUT "HOW MANY YEARS ARE TO BE STUDIED? ",Y5
  480 IF Y5<0 THEN DO
  490   V7=1
  500   GOTO 470
  510 DOEND
  520 IF Y5>40 THEN DO
  530   PRINT &
    "COMPUTER HAS BEEN CONFIGURED TO DO NOT MORE THAN 40 YEARS."
  540   PRINT "THEREFORE, YEARS TO BE STUDIED EQUALS 40."
  550   PRINT "IF UNSATISFACTORY, SEE YOUR PROGRAMMER."
  560   Y5=40
  570 DOEND
  580 Y6=Y5
```

```
590 INPUT "STARTING WITH WHICH YEAR? ",A$
600 IF LEN(A$)<4 THEN DO
610   A$="0"+A$
620   GOTO 600
630 DOEND
640 CONVERT A$[3,4] TO Y7,3260
650 A$=""
660 U$[1]=A$[3,4]
670 CONVERT Y7+5 TO U$[2]
680 IF Y6/5-INT(Y6/5)<>0 THEN DO
690   Y6=Y6+1
700   GOTO 680
710 DOEND
720 REM
730 PRINT "STANDBY.......NOW COMPUTING...."
740 RESTORE #1
750 FOR I=1 TO 1000
760   LINPUT #1;A$
770   ON END #1 THEN 1530
780   IF A$[1,1]=" " THEN 760
790   CONVERT A$[1,2] TO M1[1],3330
800   CONVERT A$[4,18] TO M1[2],3330
810   IF M1[1]=21 OR M1[1]=27 OR M1[1]=28 OR M1[1]=29 THEN M1[2]=-M1[2]
820   FOR I1=53 TO 69 STEP 4
830     CONVERT A$[I1,I1+3] TO M1[(I1+3)/4-11],3330
840     M1[(I1+3)/4-11]=M1[(I1+3)/4-11]/10000
850   NEXT I1
860   IF A$[1,3]="OSC" THEN 880
870   IF M1[5]=0 THEN M1[5]=1
880   FOR I1=73 TO 77 STEP 2
890     CONVERT A$[I1,I1+1] TO M1[(I1+1)/2-29],3330
900   NEXT I1
910   IF M1[9]<Y7 AND M1[8]<Y7 THEN DO
920     M1[8]=M1[8]+100
930     M1[9]=M1[9]+100
940   DOEND
950   IF M1[9]<M1[8] THEN M1[9]=M1[9]+100
960   M1[8]=M1[8]-Y7+1
970   M1[9]=M1[9]-Y7+1
980   I8=M1[8]
990   FOR I1=1 TO Y5
1000    IF I1<M1[8] OR I1>M1[9] THEN 1480
1010    I4=0,I3=0,R1=0,R=0,R2=0
1020    IF A$[1,3]="OSC" THEN DO
1030      IF M1[8]>1 THEN M1[8]=1
1040      R=(M1[2]-M1[2]*M1[7])*((1+M1[5])**(I1-M1[8]))/M1[10]
1050      IF I1=M1[9] THEN DO
1060        R=R*(M1[10]+M1[8]-I1)
1070      DOEND
1080      I3=M1[10]
1090      IF M1[10]>20 THEN I3=20
1100      IF F=1 THEN 1170
1110      I5=M1[9]
1120      IF I8>1 AND M1[10]>M1[9]-M1[8] THEN DO
1130        I5=M1[10]
1140        IF I5>20 THEN I5=20
1150      DOEND
1160      IF M1[9]>20 THEN I5=20
1170      I5=I5-1
```

```
1180        FOR I2=1 TO I5
1190          I4=I4+I2
1200        NEXT I2
1210        IF I6>1 AND M1[10]>M1[9]-M1[8] THEN DO
1220          GOTO 1280
1230        DOEND
1240        FOR I2=1 TO I5-1+M1[8]
1250          R1=R1+(M1[2]-M1[2]*M1[7])*I2/I4
1260        NEXT I2
1270        GOTO 1310
1280        FOR I2=1 TO I5
1290          R1=R1+(M1[2]-M1[2]*M1[7])*I2/I4
1300        NEXT I2
1310        R1=R1+M1[2]*M1[7]
1320        R1=R1-M1[2]*M1[5]
1330        R2=(M1[2]-M1[2]*M1[7])*(M1[10]+I8-I1-1)/M1[10]
1340        R2=R2+M1[2]*M1[7]
1350        R1=(R1-R2)*.1
1360        R1=-R1
1370        R1=R1*((1+M1[3])**(I1-M1[8]))
1380        R2=R2*((1+M1[3])**(I1-M1[8]))
1390        M2[I1,20]=M2[I1,28]+R1
1400        M2[I1,18]=M2[I1,18]+R2*.1
1410        F=1
1420        GOTO 1450
1430      DOEND
1440      R=M1[2]*(1+M1[4])*M1[5]*(M1[3]+1)**(I1-1)
1450      FOR I2=1 TO 32
1460        IF I2=M1[1] THEN M2[I1,I2]=M2[I1,I2]+R
1470      NEXT I2
1480    NEXT I1
1490    F=0
1500    MAT M7=ZER
1510    R=0,R1=0
1520  NEXT I
1530  FOR I=1 TO Y6
1540    FOR I1=1 TO 7
1550      REM M2(YEAR,9)=TOTAL OF LINES 1 THRU 7
1560      M2[I,9]=M2[I,9]+M2[I,I1]
1570    NEXT I1
1580    FOR I1=10 TO 16
1590      REM M2(YEAR,17)=TOTAL OF LINES 10 THRU 16
1600      M2[I,17]=M2[I,17]+M2[I,I1]
1610    NEXT I1
1620    FOR I1=18 TO 21
1630      REM M2(YEAR,22)=TOTAL OF LINES 18 THRU 21
1640      M2[I,22]=M2[I,22]+M2[I,I1]
1650    NEXT I1
1660    FOR I1=23 TO 29
1670      REM M2(YEAR,30)=TOTAL OF LINES 23 THRU 29
1680      M2[I,30]=M2[I,30]+M2[I,I1]
1690    NEXT I1
1700  NEXT I
1710  FOR I=1 TO Y6
1720    FOR I1=1 TO 32
1730      M2[I,I1]=M2[I,I1]/100
1740      REM ROUND-OFF TO NEAREST DOLLAR, .5 GOES TO EVEN
1750      R=M2[I,I1]-INT(M2[I,I1])
1760      IF R=.5 THEN DO
1770        R=INT(M2[I,I1])
```

```
1780        R1=INT(M2[I,11]/2)  .
1790        IF R/2=R1 THEN DO
1800          M2[I,11]=INT(M2[I,11])
1810          GOTO 1850
1820        DOEND
1830      DOEND
1840      M2[I,11]=INT(M2[I,11]+.5)
1850    NEXT 11
1860 NEXT I
1870 DS[1]="DIRECT MATERIAL                                                    "
1880 DS[2]="MATERIAL OVERHEAD                                                  "
1890 DS[3]="DIRECT LABOR                                                       "
1900 DS[4]="FRINGE BENEFITS ON DIRECT LABOR                                    "
1910 DS[5]="OPERATIONS OVERHEAD                                                "
1920 DS[6]="OTHER DIRECT COSTS                                                 "
1930 DS[7]="GENERAL AND ADMINISTRATIVE EXPENSE                                 "
1940 DS[8]="INFLATION - INCLUDED IN LINES 1-7, AS REQUIRED                     "
1950 DS[9]="   TOTAL                                                           "
1960 DS[10]="CONTRACT PRICE                                                    "
1970 DS[11]="TRANSPORTATION                                                    "
1980 DS[12]="CONTRACT ADMINISTRATION                                           "
1990 DS[13]="GOVERNMENT-FURNISHED PROPERTY                                     "
2000 DS[14]="STANDBY MAINTENANCE                                               "
2010 DS[15]="OTHER COSTS                                                       "
2020 DS[16]="GENERAL AND ADMINISTRATIVE EXPENSE                                "
2030 DS[17]="   TOTAL                                                          "
2040 DS[18]="COST OF CAPITAL                                                   "
2050 DS[19]="ONE-TIME NEW START COSTS                                          "
2060 DS[20]="OTHER COSTS (ADDITIONS)                                           "
2070 DS[21]="OTHER COSTS (DEDUCTIONS)                                          "
2080 DS[22]="   TOTAL                                                          "
2090 DS[23]="COST OF CAPITAL ON GOV'T-FURNISHED FACILITIES                     "
2100 DS[24]="UTILIZATION OF GOVERNMENT CAPACITY                                "
2110 DS[25]="ONE-TIME CONVERSION COSTS                                         "
2120 DS[26]="OTHER COSTS (ADDITIONS)                                           "
2130 DS[27]="FEDERAL INCOME TAXES                                              "
2140 DS[28]="(ANNUAL VALUE)                                                    "
2150 DS[29]="OTHER COSTS (DEDUCTIONS)                                          "
2160 DS[30]="   TOTAL                                                          "
2170 DS[31]="NEW START                                                         "
2180 DS[32]="CONVERSION                                                        "
2190 REM START OF PRINT ROUTINE
2200 IMAGE "LINE #",22X,"COST ELEMENT",23X,5("YEAR ",4D,6X)
2210 IMAGE 60X,"PAGE NO.",2D
2220 IMAGE 2D,".  ",50A,2X,5(15D)
2230 IMAGE "     ",50A,2X,5(15D)
2240 PRINT CTL(49)
2250 FOR A4=1 TO Y6-4 STEP 5
2260   PRINT CTL(49)
2270   PRINT USING 2210;P
2280   PRINT
2290   IF F=0 THEN DO
2300     PRINT "PERIOD DATA"
2310   DOEND
2320   IF F=1 THEN DO
2330     PRINT "CUMULATIVE DATA"
2340   DOEND
2350   PRINT
2360   P=P+1
2370   PRINT USING 2200;(FOR Z7=1 TO 5,Z2+A4+Z7+1699+Y7)
```

```
2380   PRINT
2390   IF F3=1 THEN RETURN
2400   PRINT "IN-HOUSE PERFORMANCE (CHAPTER III)"
2410   PRINT
2420   FOR I1=1 TO 32
2430     IF I1=10 THEN GOSUB 2560
2440     IF I1=18 THEN GOSUB 2600
2450     IF I1=21 THEN GOSUB 2780
2460     IF I1=27 THEN GOSUB 2780
2470     IF I1=28 THEN GOSUB 2800
2480     IF I1=25 THEN GOSUB 2690
2490     IF I1=31 THEN GOSUB 2740
2500     PRINT USING 2220;I1,D$(I1),(FOR K=A4 TO A4+4,M2(K,I1))
2510   NEXT I1
2520   GOSUB 2834
2530 NEXT A4
2540 IF F=1 THEN 3350
2550 GOTO 3220
2560 PRINT
2570 PRINT "PERFORMANCE BY CONTRACTING-OUT (CHAPTER IV)"
2580 PRINT
2590 RETURN
2600 F3=1
2610 GOSUB 2260
2620 F3=0
2630 PRINT "OTHER CONSIDERATIONS (CHAPTER V)"
2640 PRINT
2650 PRINT "ADDITIONS AND DEDUCTIONS(-) TO IN-HOUSE PERFORMANCE"
2660 PRINT
2670 REM PRINT "     ADD:"
2680 RETURN
2690 PRINT
2700 PRINT "ADDITIONS AND DEDUCTIONS(-) TO CONTRACTING OUT PERFORMANCE"
2710 PRINT
2720 REM PRINT "     ADD:"
2730 RETURN
2740 PRINT
2750 PRINT "MINIMUM COST DIFFERENTIAL (CHAPTER VI)"
2760 PRINT
2770 RETURN
2780 REM PRINT "     DEDUCT:"
2790 RETURN
2800 PRINT "28.  NET PROCEEDS FROM DISPOSAL OF ASSETS"
2810 PRINT USING 2230;D$(I1),(FOR K=A4 TO A4+4,M2(K,I1))
2820 GOTO 2510
2830 PRINT
2840 PRINT "SUMMARY"
2850 PRINT
2860 PRINT "33.  ADJUSTED COST OF IN-HOUSE PERFORMANCE"
2870 I=0
2880 FOR K=A4 TO A4+4
2890   I=I+1
2900   M4(I)=M2(K,9)+M2(K,22)+M2(K,31)
2910   M5(I)=M2(K,17)+M2(K,30)+M2(K,32)
2920   M4(I)=INT(M4(I)+.5)
2930   M5(I)=INT(M5(I)+.5)
2940   M6(I)=M4(I)-M5(I)
2950   M7(I)=M4(I)+M5(I)
2960 NEXT K
2970 U$="     (LINE 9 + LINE 22 + LINE 31)                    "
```

```
2980 GOSUB 3310
2990 FOR I=1 TO 5
3000   M4[I]=M5[I]
3010 NEXT I
3020 PRINT
3030 PRINT "34.  ADJUSTED COST OF CONTRACTING-OUT PERFORMANCE"
3040 QS="     (LINE 17 + LINE 30 + LINE 32)                    "
3050 GOSUB 3310
3060 FOR I=1 TO 5
3070   M4[I]=M6[I]
3080 NEXT I
3090 PRINT
3100 PRINT "35.  COST OF IN-HOUSE OVER/UNDER(-)COST OF"
3110 PRINT "     CONTRACTING-OUT PERFORMANCE"
3120 QS="     (LINE 33 - LINE 34)                              "
3130 GOSUB 3310
3140 PRINT
3150 PRINT "36.  COST OF MIXED PERFORMANCE                     "
3160 QS="     (LINE 33 + LINE 34)                              "
3170 FOR I=1 TO 5
3180   M4[I]=M7[I]
3190 NEXT I
3200 GOSUB 3310
3210 RETURN
3220 FOR I=2 TO Y6
3230   IF V7=0 THEN GOTO 3350
3240   FOR I1=1 TO 32
3250     REM CONVERSION OF M2 ARRAY FROM PERIOD TO CUMULATIVE TOTALS
3260     M2[I,I1]=M2[I,I1]+M2[I-1,I1]
3270   NEXT I1
3280 NEXT I
3290 F=1
3300 GOTO 2250
3310 PRINT USING 2230;QS,(FOR K=1 TO 5,M4[K])
3320 RETURN
3330 PRINT "FAILURE TO CONVERT - NON-NUMERIC DATA IN FILE"
3340 END
3350 RESTORE #1
3360 PRINT CTL(49)
3370 PRINT &
     "                                                                FILE
E DATA"
3380 PRINT
3390 QS="DOLLAR AMT"
3400 PRINT USING 3410;QS
3410 IMAGE X,"LINE",10X,10A,14X,"LEGEND",21X,"INF-FAC",3X,"M/U-FAC",3X
,"OTH-FAC",3X,"RES-FAC",2X,"BEGIN",2X,"END",3X,"YRS"
3420 FOR I=1 TO 1000
3430   LINPUT #1;A$
3440   ON END #1 THEN 3660
3450   IF A$[1,1]=" " THEN 3650
3460   CONVERT A$[4,18] TO R
3470   R=R/100
3480   CONVERT A$[53,56] TO G
3490   G=G/10000
3500   G=G+1
3510   CONVERT A$[57,60] TO G0
3520   G0=G0/10000
3530   G0=G0+1
3540   CONVERT A$[61,64] TO G1
```

```
 3550   G1=G1/10000
 3560   IF G1=0 THEN G1=1
 3570   CONVERT A$(69,72) TO G2
 3580   G2=G2/10000
 3590   CONVERT A$(73,74) TO G3
 3600   CONVERT A$(75,76) TO G4
 3610   CONVERT A$(77,78) TO G5
 3620   CONVERT A$(1,2) TO G7
 3630   PRINT USING 3640;G7,A$(3,3),R,A$(19,52),G,G0,G1,G2,G3,G4,G5
 3640   IMAGE 2X,2D,A,4X,13D.2D,4X,34A,4X,D.4D,4X,D.4D,4X,D.4D,4X,D.4D,&
4X,2D,4X,2D,4X,2D
 3650 NEXT I
 3660 END
```